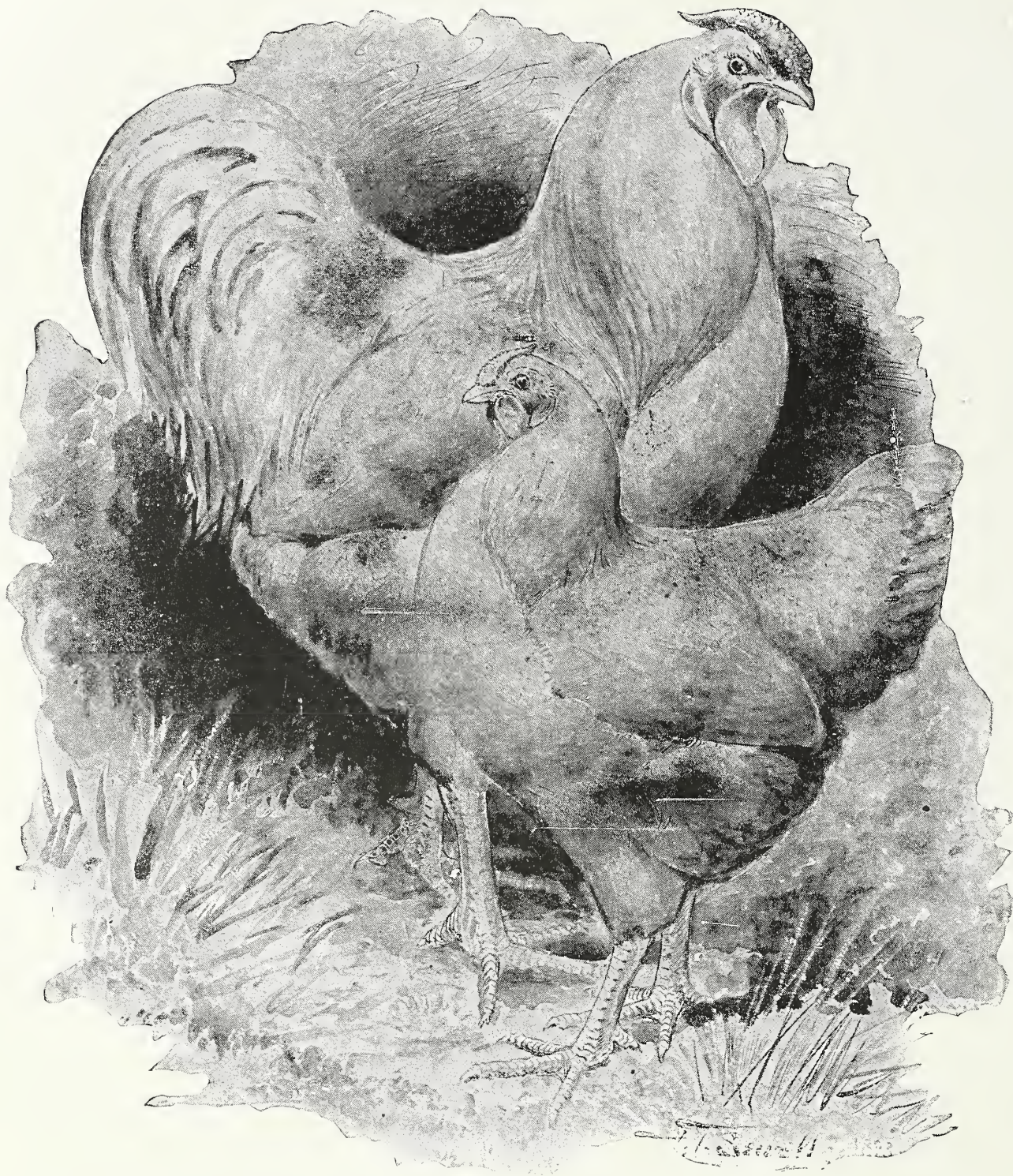


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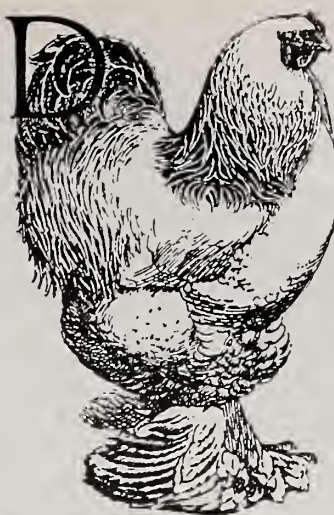
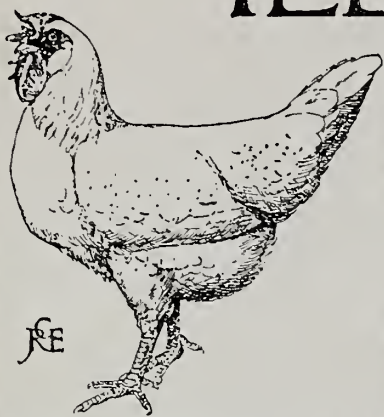




A PAIR OF BUFF WYANDOTTES (*American Type*)



# THE ILLUSTRATED POULTRY RECORD



VOL. III.—No. 10.

July 1, 1911.

Monthly Sixpence Net.

## DIARY OF THE MONTH.

### EDITORIAL NOTICES.

Telegrams: "VIVACIDAD." Telephone: CITY, 2083.  
ENTERED AT STATIONERS' HALL.

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### Poultry in Parliament.

Two important questions were recently asked in the House of Commons relating to the poultry industry. Mr. Kellaway (Bedford) called the attention of the Parliamentary Secretary to the Board of Agriculture to the way in which the poultry industry in this country was handicapped owing to the depredation of foxes, and asked whether the Board proposed to introduce legislation. In reply Sir E. Strachey said that no complaints have been received by the Board. That being so, it is time poultry-keepers made the facts more clearly known. Mr. Kellaway's supplemental question, "Is the hon. baronet aware that in the cases where the owners succeed in getting compensation the amount is only adding insult to injury?" was not replied to, but is of supreme importance.

### A National Poultry Institute.

Mr. Charles Bathurst asked whether the Board had applied for or supported an application to the Development Commissioners for a grant out of the Development Fund towards the creation of a National Poultry Institute or the conduct of research and experiment in relation to the above industry, in reply to which Sir E. Strachey said that "Investigations bearing on the poultry industry have been provided for in the Board's general scheme for aiding research, which is now under the consideration of the Development Commissioners. The Development Commissioners have approved the payment by the Board of an interim grant to the University of Cambridge in aid of breeding investigations conducted in poultry." We are glad to know that the question of a National Poultry Institute is again to be pressed forward.



### Organisation and the Development Fund.

Announcements have been made that the Development Commissioners have allocated to the Agricultural Organisation Society an interim grant of £3,000 for the present year for the purpose of extending its work in development of organisation in Co-operation throughout England and Wales, which sum is to be largely increased in the future. In this it is anticipated poultry will share to a considerable extent. The society named is to be entirely reorganised, and will be on a basis enabling it to prosecute its efforts for the regeneration of our rural community to an extent heretofore impossible. It will thus become a semi-public authority. Proposals are under consideration which will be of the greatest interest and importance to those connected with the poultry industry, which should in the near future make even more rapid progress than in the past. If these are carried out as intended the National Poultry Organisation Society will, we understand, under a somewhat altered form, have a very influential part in the new developments.

### A Notable Appointment.

Professor R. Patrick Wright, who has been for many years Principal of the West of Scotland Agricultural College, Glasgow, has been appointed Agricultural Adviser to the Scottish Board of Education, in which position his wide knowledge should be of great service to the country at large. We welcome this appointment because of the interest Professor Wright has manifested in the poultry industry. He has been largely responsible for the establishment of a Poultry Department in the College Farm at Kilmarnock and for the later developments there. He was a member of the Departmental Committee on Poultry Breeding in Scotland which reported two years ago, and it will be remembered that his portrait was given in the POULTRY RECORD of June, 1909 (Vol. I., page 551). His attendance at the recent Poultry Conference at Dublin was a further proof of his recognition of the importance of poultry as a branch of agriculture. As editor of the great "Encyclopædia of Modern Agriculture," now nearing its completion, he has taken a wide purview of farming in all its branches. We congratulate the Secretary of State for Scotland on this appointment, and wish Professor Wright many years in it of successful work.

### Utility Poultry and the Standard.

At the last annual meeting of the American Poultry Association three members were delegated to consider the question of a standard of perfection for utility poultry. Recent ex-

changes record that this committee has reported in favour of the project. From what has been stated it would appear that the idea is to issue a separate standard from that used for exhibition poultry. If that be so it will be "confusion worse confounded," for every exhibition that attempts to cater for practical as well as fancy fowls will probably have to provide duplicate classes and judges; and where, in some of the newer breeds, the line can be drawn passes our comprehension. The



**A FREAK CHICKEN.** [Copyright.  
With 3 Beaks, 2 Combs, and 3 Eyes.  
Fortunately it lived only a very few hours.

cleavage now apparent between these two sections of poultrymen will yawn still wider. Such a suggestion is the most severe condemnation of the present drafting of standards that could be devised, proving that all utility men have claimed is fully justified. Surely the obvious thing to do is to bring the general standards into line with practical needs, so that the apportionment of points shall not be antagonistic to economic qualities as at present.

### The Fox Committee's Report.

Poultry-keepers of all grades will read with interest the report issued on behalf of the joint committee appointed to defend the interests



of poultrymen in respect to losses by foxes. It is satisfactory to note that in all cases, save one, brought before it compensation has been secured, and we congratulate the members on the attainment of so desirable a result, which cannot fail to have a wider influence than these cases themselves. The exception recorded is a very serious one, which threatens the entire arrangement entered into with the Masters of Foxhounds Association. The Southdown Hunt states that it "cannot entertain claims for the loss of poultry except in the case of farmers over whose land the hounds hunt, and from men in their employment." If such limitation were accepted it would simply mean that only larger farmers and their employees, who are well able to protect themselves, will receive compensation, and the greater body of smaller farmers and poultry-keepers will be denied what are their rights, and in whose interest the movement has been mainly directed and intended. Such a policy, if persisted in, would go far to counteract the influence of the Small Holdings and Allotments Act, and check that rural development which the Act promotes. It is, therefore, a question of public importance, and should be taken up by the Board of Agriculture.

#### Buttermilk for Laying-Hens.

Much has been said of late as to the virtues of buttermilk. If all that has appeared in the public Press might be believed, the secret of longevity is to be found in this product, due to its prophylactic action upon the animal body and destructiveness to bacteria. We know that it is excellent for fattening poultry, but it would appear that it is equally valuable for promotion of laying, if an experiment conducted by Professor W. R. Graham at Guelph is confirmed by later results. Five lots of twenty-five pullets were tested to show the effect of animal food. All had whole grain and dry mash supplied. Number 1 had its animal food in the form of buttermilk, given as drink, and this came easily out first, both in the number of eggs produced from October 1, 1909, to April 30, 1910, when the experiment was discontinued, and in the cost of feeding per dozen eggs. The total eggs were 2,040, or an average of 81.6 in seven months, and the cost per dozen eggs was 10.68 cents (5½d.). The second best as to laying were fed on 10 per cent. of beef scrap, with a record of 1,670 eggs, or an average of 66.8, but the cost per dozen eggs was 14.28 cents (7¼d.). Third had also beef scrap (in hopper *ad lib.*), with 1,664 eggs, or an average of 66.56, but the cost rose to 15.84 cents (nearly 8d.) per dozen eggs.

Fourth had all the green-bone they would eat, and produced 1,654 eggs, an average of 66.16 at a cost of 15.48 cents (7¾d.) per dozen; and fifth, which had no animal food whatever, laid 1,496 eggs, at a cost of 12.69 cents (6½d.) per dozen. The hatchability of the fifth lot was highest (59.5 per cent.), and Number 1 second (55 per cent.). This is a hint for dairymen-poultry-keepers.

#### Dr. Leon J. Cole.

Those who have followed the investigations at the Rhode Island Experiment Station in connection with blackhead in turkeys will be familiar with the name of Dr. Leon J. Cole,



A BARRED ROCK PULLET.

Showing Feathers plucked from various sections. This fine specimen was bred by Judge F. H. Shellabarger, U.S.A.

[By courtesy of the *Western Poultry Journal*, U.S.A.]

who is now Professor of Animal and Plant Biology at the University of Wisconsin, and works in the closest association with Professor J. G. Halpin, who is in charge of the Poultry Department. Dr. Cole is at present on a visit to Europe, the first time he has crossed the Atlantic, and we have been glad to have the pleasure of meeting him, for his own as well as his work's sake. His object is to have a run around—which means landing at Glasgow and returning from Naples to New York—and poultry does not enter much into it, but he has done something in that direction by the way. The more of such visitors the better, as inter-communication of ideas among those engaged in any branch of the work is all to the good.



## ON THE RED HORIZON.

By JOSEPH PETTIPHER.



ASHION in the colour of Fancy, Exhibition, and even in Utility poultry goes in waves pretty much in the same manner as it does in different breeds. At one time there was a craze for Buff, at another for Blue, and now we are evidently just entering upon a Red era. When these colour booms come on we see breeds that in some instances have been in existence for a number of years without creating any particular notice or gaining more than quite a limited number of adherents suddenly leap into favour and become one of the most popular varieties of the day. In some instances this means that they will subsequently remain a popular standard breed; in others that after a short run they drop back to their former obscurity. Probably all this is for the best, as it is doubtless the fittest that survive. One noticeable and decided advantage of these various booms is that in almost every case there is a marked trend in favour of an improvement in useful qualities—an effort to combine the useful with the ornamental properties. This is good, because there appears no real reason why a good layer or a good table-fowl or a combination of both should be either a mongrel or a bad specimen of its breed when viewed from a Fancy or Exhibition standpoint. The better and more carefully a bird is bred to standard the more dependable it should be to reproduce its like, and provided that standard is correctly framed, the well-bred typical specimen should also be the one most dependable for utility purposes. We are just now on the edge of the Red horizon—for the next few years it is safe to predict that red will be one of, and probably the most popular colours in the poultry world, both exhibition and utility. And in this fashion we may observe the advance in combination above referred to, because red is a more lasting and permanent colour in the feathers of a fowl than either a buff or blue. Red fowls will stand exposure to the elements and the uncertainties of our English climate without damage to colour of plumage much better than those above named, and for that reason are more likely to be lastingly popular. The specialist and the professional exhibitor may be able and willing to devote endless trouble and great expenditure to shading from sun and sheltering from storms the birds they intend to exhibit, but the bulk of people who keep fowls will favour those

that can be kept under ordinary conditions and still retain their proper colour whether they are exhibitors or not, and this is one of the reasons why we predict a long and popular run on the red colour in at least some of the breeds that are just now coming into favour. To glance for a moment at some of the Red breeds that are already commanding attention, we must first take the

### RHODE ISLAND REDS,

and whatever we may say about some of the poultry notions and tall stories of our Yankee cousins, it is useless to deny that in this instance to them lies the credit of having pro-



ONE OF MR. EDWARD RISDON'S RHODE ISLAND RED COCKERELS. *[Copyright.]*

duced a handsome and decidedly useful variety of distinct type and character, hardy in constitution and possessing a good combination of laying and table properties. As far as its history goes it is generally understood that



this breed was first produced in Rhode Island and in some parts of the State of Massachusetts, as a market variety, from crossings of the old Cinnamon Cochin, the Red Malay, and the Brown Leghorn, though there were probably other variations by different breeders. Anyhow, after a few years a general type was gradually evolved, and in 1904 the first eggs came to England. These were brought over by an Englishman, returning on a visit, for his brother, Mr. Edward Risdon, of Bridgwater, Somerset, and the latter has persistently stuck to the breed and kept them ever since on the old family farm at Sidbrook, near Taunton, making fresh importations from time to time in order to keep the stock well up to date and character. At one time, though there had been subsequently several imports, it is probable Mr. Risdon's were the only birds of dependable Rhode Island blood in the country, and customers were practically nil. Finding that he had a good thing, he clung to it, and now within the past two years the breed has almost suddenly leapt into one of the most popular of the day—over eighty specimens being entered in two classes at the International Show last year. They have been heavily imported, and have spread practically all over the country. A strong club has now been formed to look after the interests of this breed, of which Mr. G. Scott, of Pudsey, Yorks, is the hon. secretary, and without doubt the Rhode Island is destined to play a prominent part in the red poultry boom.

Next in order of popularity as a new Red breed we come to the

#### RED WYANDOTTE,

but in this instance, though the name and the progenitors were American, the Red variety originated in England, first being introduced by Mr. Allen Bullock, of Box, Wilts. And there is no reason seriously to question his assertion that they were made purely and entirely from Wyandotte blood, chiefly by selection of the deepest-coloured Buffs obtainable. This is amply borne out by the distinctly Wyandotte type of the specimens that he and others have already exhibited. Red Wyandottes have advanced much more rapidly in the time than did the Rhode Islanders, as it is not more than about four years ago that Mr. Bullock first conceived the notion of producing them. The Wyandotte has ever been an increasing and popular breed, and for the same reason that has already been stated the Red variety is likely to be one of the most popular branches of this ubiquitous family. They are hardy, lay a good-sized egg of an even brown tint, make good winter egg-producers, and as

table-birds they compare very favourably with all other Wyandottes, being larger than most of their confrères and possessing finer quality flesh. We confidently anticipate this will be not only one of the most popular Red breeds, but also occupy a prominent position in the Wyandotte world in the course of the next year or two, since a number of prominent breeders are already taking it up and are busily engaged in breeding it up to the desired standard of colour and other points. A proposal is already afloat for the formation of a club to foster its interests.

Perhaps the oldest Red breed in existence is

#### THE RED DORKING,

an old-time Kent, Surrey, and Sussex variety that was known in the farmyards of those and possibly other Southern counties long before the days of poultry shows. A breed greatly admired by the late Harrison Weir, who gave it a prominent position in his poultry book, it had for a long period remained in obscurity, whilst other varieties of Dorkings, probably more or less founded on it, had advanced both in size and popularity. It has recently been brought into considerable notice, and breeders are realising that if the Red Dorking is to be generally popular it must be brought up to twentieth-century standard; this they are evidently endeavouring to do. The boom in Red breeds generally should prove of great assistance to them. Farmers' families are still existent who have bred these Red Dorkings for generations, prominent amongst them being Mr. Harry Hamlin, late of Edenbridge and now residing at Windsor, who, with his late father, can claim a record of eighty years with the breed. Mr. Hamlin claims that a typical Red Dorking identically represents the fowls described by Columella as the best English table-fowl, and says the type that crew when George III. was crowned remains to crow in all its purity at the Coronation of George V., but he laments the craze for crossing, which has, he says, spoiled many strains. He, however, tells me there is a steady and increasing demand for the genuine article, not only all over Great Britain and Ireland, but also in America, whence he has for years shipped numerous consignments, including a recent order to the college at Pennsylvania. Of late there have been some who have suggested the desirability and necessity of double-mating in order to produce typical specimens of both sexes of Red Dorkings. This is lamentable as being calculated to retard the progress of the breed, and in the opinion of the writer should not be necessary. The Dorking is pre-eminently a farmer's fowl—the Red

especially so—and as such double-mating would prove fatal to its best interests. As a hardy, useful, all-round breed it deserves well of poultry-keepers generally and the farming interest in particular. A new Specialist Club has recently been formed to advance the interests of this breed, of which Mr. E. B. Fitch-Hogg, of Rayleigh, Essex, is the hon. sec.

Amongst the most recent Red breeds to come under notice we find

#### RED ORPINGTONS,

which have been bred by that well-known specialist, Mr. W. Holmes-Hunt, of Brook House, Hellingly, Sussex, who, after very careful breeding and selection, is formally introducing them this year as "Coronation" Red Orpingtons. In producing this variety, Mr. Holmes-Hunt appears to have relied solely on Orpington blood, making a series of crosses with deep reddish-coloured buffs, red-hackled and red-tailed blacks, and some strains of whites which threw a considerable amount of dark buff plumage. He now describes these birds as being "of a velvety crimson, not unlike very dark mahogany. An ideal fowl for the utility poultry-keeper and fattener, as they beat all other Orpingtons for the latter purpose." He has this season a pen of these new Red Orpington pullets which commenced to lay in November, and only showed any signs of slackening or broodiness with the advent of June; and if, in evolving this new colour, he has also fixed a strain minus the excessive broody tendencies of so many strains

of the Buff variety, they should prove a very satisfactory addition to the Orpington family. Anyhow, Mr. Holmes-Hunt has so much faith in these new Reds—of which he claims to be the originator—that steps are now being taken to form a club for them, which in itself proves that they are already receiving some considerable amount of support from other breeders. As before stated, the more lasting and permanent colour is a recommendation, and backed up by the already popular name of Orpington, we may reasonably expect to see these birds come speedily to the front now that the originator has brought them to a state in which he considers them fit to introduce as a distinct variety.

As the Red boom increases we hear some mention of a Red Leghorn, of which I believe one or two specimens have already been shown, but so far they do not appear to have made much headway or to have passed beyond the initial stage of "reddish buffs," and being as yet in very few hands their ultimate popularity is a matter of doubtful conjecture.

A Red Cochin provides the possibility of a revival of a once popular breed, and there are other rumours. Naturally, the first in the field will be those that have already a Buff variety to work upon, amongst which the Plymouth Rock will doubtless become a favourite. But we doubt if it will stop there, and ere long we may expect Reds in other coloured breeds, such as the Minorca, the Langshan, and the French breeds, to appear speedily on the Red Horizon.

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## THE GRADING OF EGGS AND ITS VALUE.

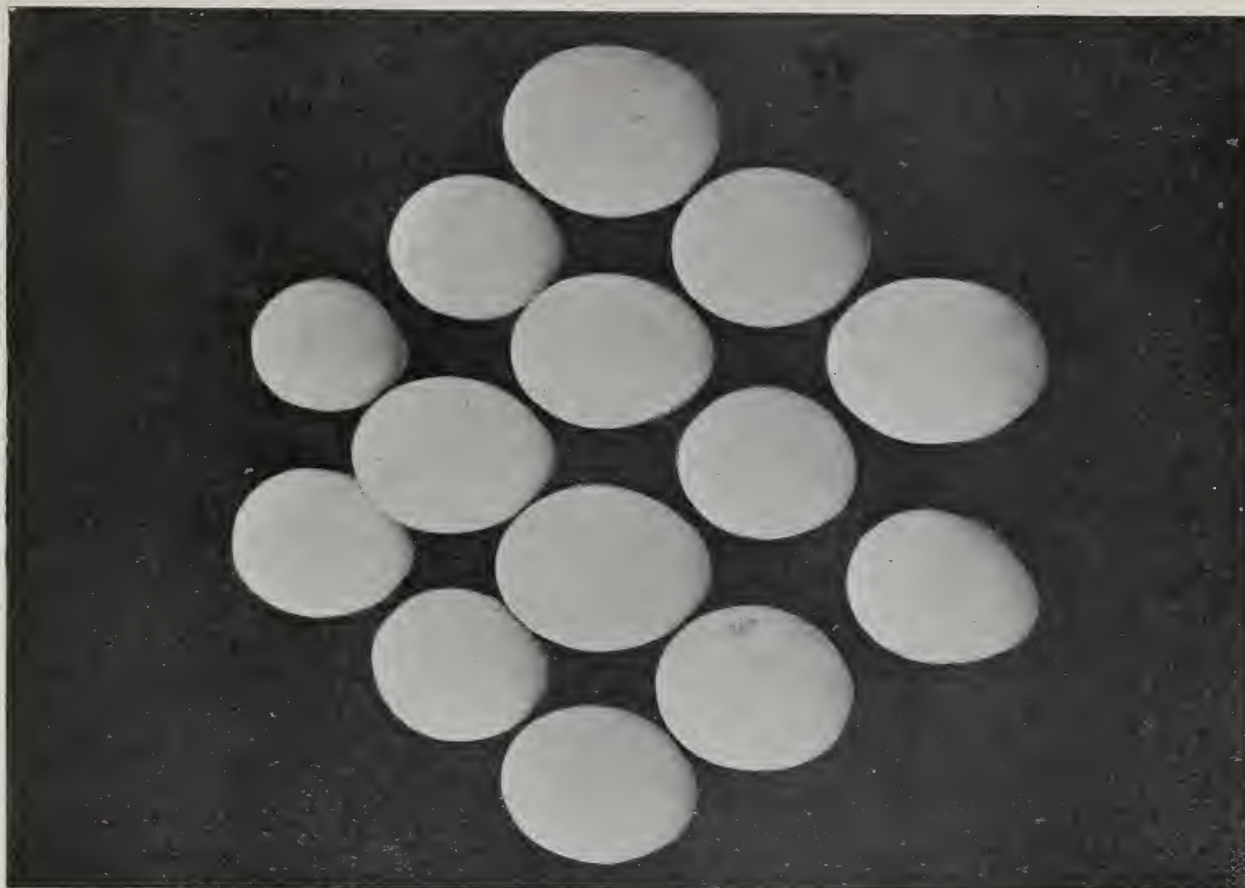
By EDWARD BROWN, F.L.S.

THAT "comparisons are odious" in some instances may be true, but what is equally a fact is that "nothing is large or small in itself." Size is a question of comparison. Some things we prefer when large, others are valued for their diminutiveness, still more because they are neither one nor the other. Few products are judged by bulk alone, though the tendency is ever in favour of that which is largest, so long as its other qualities are maintained. A huge diamond has a value many times greater than its weight proportionate to a small one, provided that it is equally perfect and brilliant, by reason of its rarity. And that applies in many other directions. As a rule, however,

increase of size and weight appears to tend more to imperfection, and in respect to food products to coarseness of texture and lack of flavour. Equally true is it that the converse influence is that reduction of size means refinement in these two respects. "Good stuff goes into little bundles" is a saying with more than a modicum of truth, but is often applied falsely.

The sale of eggs by weight has often been advocated, and I have always had a sneaking predisposition in favour of that system, as it would apparently be fairer to the producer than is the present method. Recently regulations in this direction have been made in America, but some of these at least have had to be

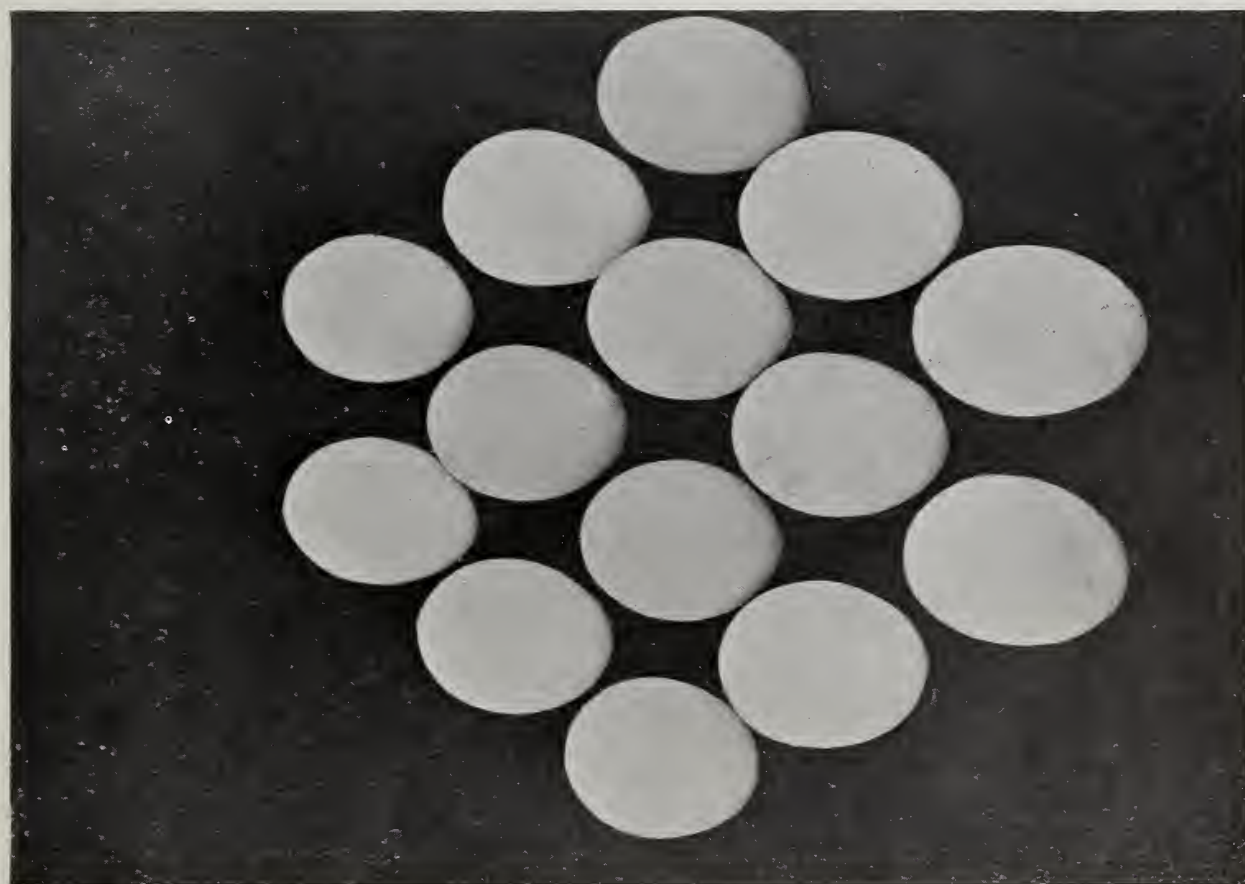




UNGRADED EGGS.

[Copyright.]

In this lot two each are included of 13, 14, 15, 17, and 18lb. eggs respectively, and four of 16lb. are included. The unsatisfactory result is apparent.



GRADED EGGS.

[Copyright.]

Note the even appearance. Those in top row look smaller, but that is due to greater distance from camera. All are shapely and good in shell.



abandoned. The results proved unsatisfactory. Quality suffered and size was predominant. It is a question yet to be proved whether poultry-keepers would gain by such a system. Those whose hens uniformly produced little eggs, and there are many such, or who thought that freshness is a secondary question, would reap an advantage, at the expense, however, of the better-class producers. Very reluctantly I am drawn to the conclusion that the loss would be equal to the gain so far as the superior trade is concerned, and that the vendors of the last-named would find their returns depreciate instead of appreciate. The fact is evident, as I pointed out in "The Standardisation of Eggs," which appeared in the *POULTRY RECORD* last December (Vol. III., page 105), that at some stage in their transit from hen to breakfast-table grading must take place as to size apart from other considerations. In that case it is better this should be done as early as possible, and by producers rather than traders.

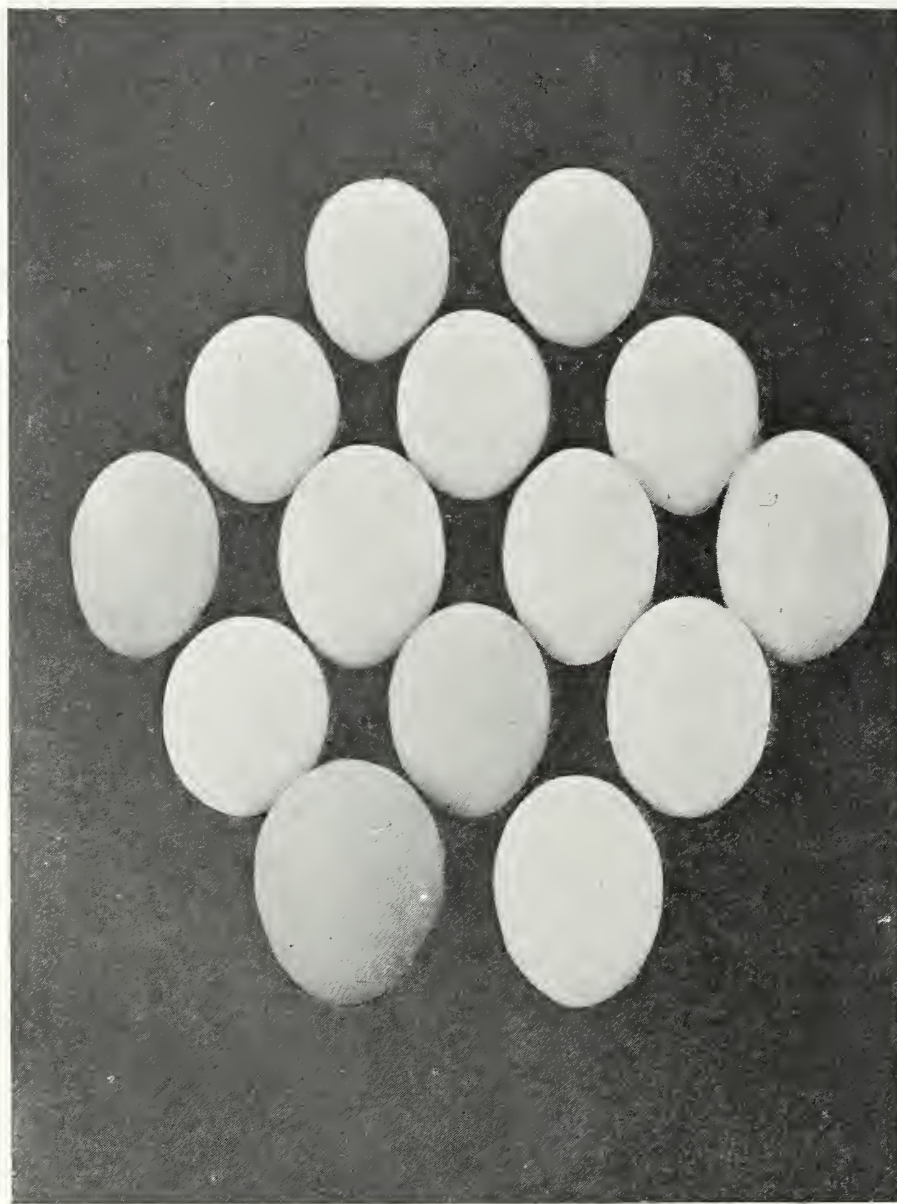
Selection is, therefore, a necessity. In the article referred to I endeavoured to indicate the various points to be kept in view. My present object is to emphasise the importance, and, therefore, the cash nexus, of grading in accordance with market requirements, for this forms the dominant factor. Whatever adds to or detracts from the returns received by producers is of importance, for, as mentioned on previous occasions, it is the pro-

ducer who gains or loses in accordance with the perfection or imperfection of whatever system of marketing is in vogue.

Grading is carried to its highest degree in foreign eggs, which come to our shores carefully discriminated in accordance with size and weight, ranging from 13lb. to 18lb. and even 20lb. the great hundred. When one of these cases coming from other countries is opened each single egg is found to be exactly the same size in these two respects as every other egg

in the total of 1,440. The average is not arrived at by a medley, thus striking the mean, but by bringing each egg to the average of the entire bulk. The advantages of such a method are obvious, not alone, however, by reason of meeting marketing requirements, but for safety in transit. The packing material used is either straw or wood wool, and the eggs are in layers without any divisions or sections, so that they touch each other. It will at once be evident that if not closely graded the larger would be held firmly and the smaller rattle about, so that there would be a large amount of breakage.

When all are identically the same size and the case is filled, on nailing down the top every egg is gripped by the packing above and below, and no one can move out of its place, so that with ordinary care in handling the risk of breakage is reduced to the minimum. As a result the loss which would otherwise accrue from this cause



In this lot three 18lb. eggs have taken the place of three 16lb. The dwarfing of the latter is at once evident. [Copyright.]



is very small indeed, considering the fragile nature of the contents.

Eggs for market require selection, more especially in the better-class trade. Speaking generally, for boiling purposes, which is the most profitable demand for which to cater, as the prices paid are higher than for ordinary cooking, eggs should be from 2oz. to 2 1-8oz. in weight and of a good shape, so that they may fit the egg-cups and look uniform when served upon the breakfast-table. It is for this reason that small and very large eggs respectively are relegated to the "cooker" class, which are always lower in price, even though in all other respects they are equal to the standard of quality. A combination of elements go to make up the first-class egg of commerce, failure in any one of which vitiates the whole. As the strength of a chain is determined by its weakest link, so the ultimate value of an egg is more or less fixed by whatever degree it may fail to conform to the perfect entity. Therefore, selection and grading are all in the interests of producers, and the greater their recognition of that fact the better will it be for their pockets.

There is, however, another point which is of considerable importance—namely, that every effort should be put forth to present produce in a manner that will do it the fullest justice

and give it the best appearance possible. The fruiterer by grading, by polishing his apples and other hard fruits, by neat display, adds greatly to the attractiveness of his wares, which may be thus of no more actual food value than if shown roughly, but they look better and he can obtain more money for them. We need to apply the same methods to eggs. A mixture of sizes spoils the *tout ensemble*, whereas uniformity improves it. I have endeavoured by means of the accompanying photographs to show that there is an important gain as a result of careful grading. In the first of these pictures are seen a lot of eggs all of the same size (16lb.), and in the second a mixed lot, ranging from 13lb. to 18lb. per 120. The presence of one or two very big or very little eggs in a lot will militate against the whole. Even the little thirteen-pounders look bigger than they otherwise would if there are no others with which they are compared, and that applies all through the respective grades. It is a pity we cannot persuade hens to produce all the eggs they lay to standard size. That the owners can do much in this way, by selection of eggs for hatching, is unquestionable, but that there will be variations in size is equally true. Our business is to select by grading. The normal is what pays best. It is better not to dispose of the abnormal unless the quantity is sufficient to make a grade of its own.

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## FRESH LIGHT ON CHICKEN-REARING.

By J. W. HURST.

MR. H. J. MONSON is in need of no introduction to agriculturists, his name having long been familiar in connection with lectureships at the Agricultural College, Wye; the Yorkshire College, Leeds; and the educational work of various County Councils. It is, however, probable that his ten years' work under the Egyptian Government is less generally known, but his present investigations regarding light and colour in relation to the rearing of chickens are largely the result of observations made during that period. The application to poultry-production of what Mr. Monson describes as the rediscovered knowledge of the ancients is so refreshingly novel in these days of the multiplication of artificial methods, and the possibilities of the suggestions are so economically important, that I gladly availed myself of a recent opportunity to visit Chorley Wood, where, amid the delightful surroundings of that corner of Hertfordshire, the laws of light and colour are

being made the subject of research. Various experiments have already been made, and investigations are now in progress with a view to the acquisition of definite practical knowledge regarding the properties of colours and their application to plant life, insects, the growth and development of birds, and the ailments of the human race and the animal world; the laws are even now being applied in brewing—so wide are the possibilities of the whole subject—and Mr. Monson is in constant communication with other investigators who are experimenting in the several directions along which this fresh light of discovery is shedding its rays of prismatic colours. If only a tithe of the anticipations be verified the results of the application of the laws involved will in many ways be revolutionary, and if the theories relative to chicken-production are thoroughly established it will be fortunate for producers that fowls lend themselves so readily to the uses of the scientist.



It is not easy for a layman to at once grasp the intricacies of a new line of investigation, regarding which there is no great amount of experience and very little illuminating literature that applies in the required manner; but as far as I could gather during the course of conversation and the examination of object-lessons, the underlying theory is



MR. MONSON, [Copyright.]  
with a week-old chicken being reared under blue glass

as follows. We all know as a matter of common experience that there are natural seasons of growth and development for both plants and animals, and as poultry-rearers we recognise the advantage of raising our stock during the spring and summer. Mr. Monson gives as the reason for the rearing advantages of these seasons the facts that in spring the electrical rays are in comparative excess and favourable to rapid and healthy growth, whilst the advance of summer promotes development by means of the illuminating and heating rays; and his application in chicken-rearing consists in the adaptation, by the use of various colours, of these principles at all seasons of the year.

The experiments are conducted by means of specially, but simply, constructed foster-mothers within which—again by the use of colours—heat is stored by the employment of copper and charcoal; but the essential point in

which these appliances are so distinctive is that they are covered with glass of various colours. Blue glass with white is used during the early stages of growth, and it is curious to note how the chicks will—after feeding—settle down to slumber beneath the apparently beneficent influence of this colour. It is, it may be noted, one of Mr. Monson's arguments that it is more natural and important for quite young birds to eat and sleep than to be obliged to scratch before they can eat, in which, as in so many other particulars, his theories are opposed to general practice and opinion. Subsequently, as the birds progress, yellow glass is introduced and largely replaces the previously used blue—the yellow colour serving to stimulate the nerves; whilst as there is a nearer approach to maturity red glass is employed in place of yellow, the amount of heat being regulated by a combination of coloured and clear glass, by which means it is claimed that it is possible to produce a close imitation of the changes that take place in the composition of sunlight at any season. It is, however, pointed out that it is of the first importance to scientifically regulate the tints on account of the peculiar and individual power of each description, and I was shown how widely the temperature differed under the various reds used in the experiments.

At this point I raised the question of the difficulties that are commonly found to be inseparable from long continued rearing in such close conditions of confinement as are suggested by this use of glass roofing, and I was pleased to find that Mr. Monson is no advocate of extreme hot-house methods for practical production. By way of illustrating a reasonable mode of applying his principles he showed some chickens that were then seven weeks old. These birds were running in the open, and whilst all were forward for their age, one was considerably in advance of the others as regards size and development, that bird being the only one of the brood that had been subjected to the colour influence during the first four weeks of its life—the others having been reared in the ordinary way. It must, moreover, be explained that the chicks in the coloured-glass covered foster-mothers are not confined absolutely, but are allowed the use of an outer open-air run. It is Mr. Monson's suggestion that subjection to the colour influence during the first four weeks, in the manner indicated, is sufficient for the general purpose, the birds being then run out in the ordinary way until shut up for fattening—when coloured glass is once again brought into use. Purple glass is then used, either on the top and front of the fattening-coops or in the



lights of the shed if the coops are placed under cover; the object being to hasten fattening by the stimulative effect of this colour on the digestive organs. But whether more extended tests will justify the claim that the promotion of sleep and a healthier appetite during the earlier stages, by the influence of blue, will hasten maturity to the extent of a month's gain in the rearing period remains to be proved; and the possible effect of such hastening, for any other purpose than rearing for market, is a matter for further accurate investigation. All that I saw was extremely interesting, and undoubtedly suggestive of the intended tendencies, but the available data appears to be insufficient for the immediate formation of very definite conclusions. That there is "something in it" is evident, but, as Mr. Monson has stated, relative to the laws of light and colour, "there still remains a wide field for research."

I was, however, particularly impressed by the healthy, sturdy vitality and generally forward appearance of all the birds. The feathering of the youngsters within the foster-mother was well advanced for their age, and in this particular the experiment confirms what Mr. Monson had previously observed in Egypt. He had noted that under the conditions prevail-

ing in that country during nine months out of the twelve a considerable proportion of the fowls remained almost bare of feathers, but that when protected from the predominating red rays their feathers quickly grew again. The coloured-glass foster-mother is evidently stimulative in this direction, of which the appearance of the week-old chicks is satisfactory evidence. Another interesting application of the colour influence is medicinal in character, the bowels being acted upon by means of pure drinking water supplied in bottles made of different coloured glass—the general suggestion being that it is desirable to use blue glass bottles in the open runs and amber-coloured bottles in the foster-mothers; but so general is the scope of the investigation that, among other projects, Mr. Monson has in contemplation the use of coloured rays during incubation as well as in rearing. Whatever may be the ultimate practical benefits, the suggestions undoubtedly open a large field for the work of the scientific investigator, and whilst the experiments are themselves full of a new interest the proved results promise much in connection with the economics of the poultry industry—the reduction of the cost of production being one of the most pressing necessities.

## POULTRY THROUGH THE MICROSCOPE.

### IX.—THE CHEMISTRY OF EGGS.

WRITTEN AND ILLUSTRATED BY JAMES SCOTT.

TO say that it is possible to make a wax candle from eggs sounds somewhat foolish, but the statement is a fact. Many other remarkable matters are brought to our notice by a study of the chemistry of eggs. As will be seen during the progress of my article, the subject has a direct bearing on the profession of poultry-rearing, and would not in any case be wasted knowledge. I shall exclude consideration of the shell and lining membrane and confine my attention to the edible portions, referring especially to the fowl's egg, though those belonging to all kinds of birds come into the same category.

We have in the egg what appears to be simply two substances, the albumen and the yolk. These are, however, very complex in their constitutions and properties, and are of exceptionally high food value, as the majority of people already know. The reason why the contents are so valuable is less widely appreciated.

Dealing with the yolk first, we find it, on magnification, to consist wholly of minute globules, as I explained in an earlier number of this magazine. The yolk is, practically speaking, a peculiar kind of oil, in which are dissolved or suspended particles of various nutritious substances, the most important being lecithine, which is allied with phosphorus. The very name lecithine is derived from the Greek word signifying egg-yolk, thus proving its special intimacy in this connection. Lecithine is derivable also from the blood, the bile, and the brain—in which, of course, it may have been elaborated from eggs—and in various vegetables; but its chief abiding-place is egg-yolk.

Some very highly-praised and curative nerve-foods, which are dissociated from mere medicines, have recently been put upon the market, and these contain lecithine as their main ingredient. We all know that phosphorus has been regarded as the very basis of brain



tissue. It now appears that intellectual activity and acumen depend not only on phosphorus, but on its association with lecithine. Lecithinic phosphorus is the usual term applied to the substance by chemists. While all brain matter



FIG. 1.—A MAGNIFIED PINHOLE. [Copyright

Lecithine, upon being dissolved in lactic acid—i.e., milk acid—breaks off into wispy flakes which float hither and thither as above depicted.

possesses a similar fundamental composition, it is only among the higher grades of mammals that anything approaching to reason is exhibited, and it is believed that this superiority is largely accounted for by the assimilation of lecithine. This explains why those men who depend mainly on their intellect for their livelihood find eggs the best item in their food.

Lecithine, which is also called protagon, is obtainable from egg-yolk in the following manner, and it is well worth while for the reader to test the matter for himself. The yellow colouring matter is first extracted by means of ether. Here a note of warning should be uttered, because ether is exceptionally inflammable, and should never be experimented with in a room having either a fire or light in it. After being decolourised, and removed from the ether, the yolk is washed, and the alcohol (spirit of wine), at about 45deg. or 50deg., is added to it. Alcohol also is inflammable, but is not so risky as ether. The action precipitates the yolk, when most of the water can be poured off, or filtered away. The substance should then be allowed to evaporate its remaining moisture at a low temperature and then be treated to another dose of warm alcohol. Upon afterwards cool-

ing it to about 10deg. the lecithine separates, and needs then to be collected and washed in cold alcohol, which will afterwards evaporate and leave the lecithine free and isolated.

Alcohol is produced in the human body not only through the medium of malt liquors and spirits, but by the chemical action therein of starch, dextrine, and sugar, in conjunction with the yeast of bread, the ferments of digestive juices, and in other ways, so that it is quite relevant to our subject.

Pure lecithine is a waxy substance, and in its ripened condition is reddish-brown, like ear-wax. Upon treating it with acids it yields stearin (or else palmitin), glycerophosphoric acid, and choline. In water it swells to an emulsion, but dissolves in alcohol and ether.

When a scrap of lecithine is dissolved in lactic acid on a glass slide, we can see it slowly split up into thin flakes, which group themselves into all kinds of picturesque formations, as in Fig. 1, the fine lines being really the edges of the altering substance. Lactic acid is as clear as water, and is appropriate because it is derived from milk, and exists naturally in the human body.

Pure stearin (also called stearic acid) is a wax that cools down from its melted condition

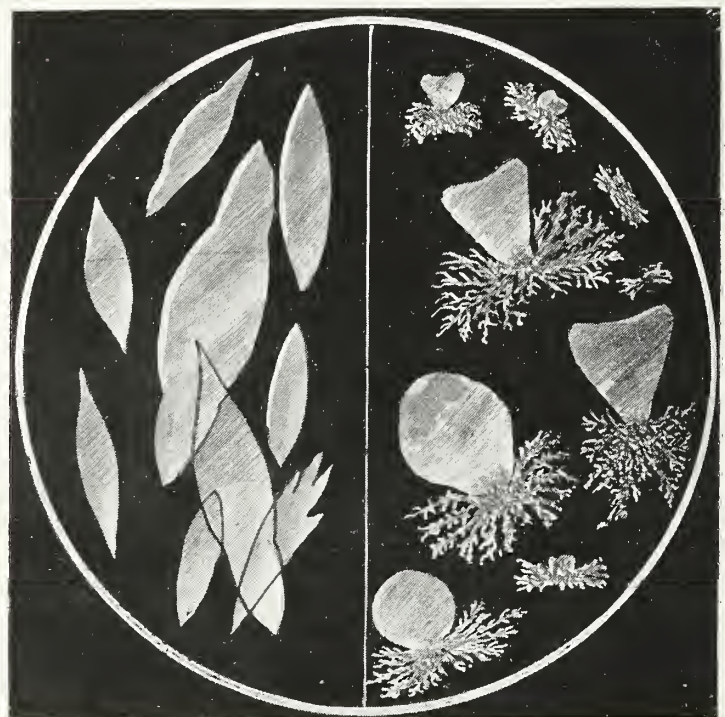


FIG. 2.—A MAGNIFIED PINHOLE. [Copyright.

Stearin and palmitin (waxes) are obtainable from egg yolk. They are identifiable by their peculiar behaviour when cooling from the melted to the white condition, when they produce shapely flakes. Palmitin is shown to the left; stearin to the right.

by generating myriads of tiny, symmetrical, fluffy flakes or slabs, the presence of which impart the glistening aspect to the white opaque substance. That is to say, while it is quite



transparent when melted, tiny separate plates of the kind shown in Fig. 2 (left-hand



FIG. 3.—A MAGNIFIED PINHOLE. [Copyright. Vitelline is obtainable from egg-white (albumen), and when some is heated in water on a glass slide pretty figures like the above arises.

side) suddenly spring into view, become semi-opaque, fuse together, and are responsible for the altered condition—the dense white one.

The shapes are best observable about the edge of the apparently creeping patch of white which can be seen passing over the oily matter when the wax is melted on glass and then cooled.

Palmitic acid (or palmitin) cools similarly by engendering amalgamated collections of longish plates, which arise in the same way as those just described, none being present in the melted substance, a few scattered ones appearing in it when semi-cooled, and a packing of them coalescing to make the solid wax.

Turning now for awhile to albumen (the white), we learn that the layers immediately enclosing the yolk contain a peculiar crystalline substance called vitelline. This, when extracted and refined, is a dry creamy-white powder. Upon placing some in water on a glass slide and warming it, beautiful arrangements of its modified particles are obtainable, as in Fig. 3.

White of egg will become horny and translucent if exposed in bulk to a gentle dry heat for a time; and when spread evenly over a plate it will dry as a sheet of glistening pale yellow substance, capable of being preserved for years if kept free from moisture. A very informative experiment is to place the white of egg in a glass jar and stand it before a clear fire. It will gradually turn deep white, brown, and dense black.

## WHITE PLUMAGE IN POULTRY.

By J. STEPHEN HICKS.



It is a somewhat curious fact that a single sentence will often stand out from a book or a speech, and remain fixed in the brain of the reader or hearer long after the remainder has been entirely forgotten. Thus it is with the following words, contributed by the Rev. J. Crombleholme to the late Lewis Wright's "Book of Poultry," which stuck in my mind the first time I perused, as a novice, that invaluable work, and I can repeat them now almost word for word:

"When I first began breeding White Wyandottes, I wrote to a noted breeder of White Leghorns, and asked him how he managed to show such very white birds, hinting that if there was anything in it, he might let me know. His answer was that his was a *white strain*. I took it then that he did not wish to tell me his secrets, and so let the matter drop; but now, after eight years of breeding, I have come to the conclusion that this breeder was not joking, but telling a straightforward tale."

There is no doubt that this now probably forgotten breeder of White Leghorns had hit upon the keynote of the matter when he mentioned strain, but it is also equally true that there can be strains of white fowls built upon different lines, and the laws which hold good with one strain need not necessarily do so with all the others.

Enthusiastic novices and breeders of new varieties are wont to put pen to paper, and hold forth on the laws governing colour, whereas it is the experienced that shake their heads and, doubting, hesitate either to affirm or contradict.

It is with this preamble and apology that I am setting out to give the result of a few personal observations on the plumage of white races of poultry.

There is, of course, an infinite number of degrees in the purity of white plumage, ranging from what is termed by breeders a "stay-white" bird down to the outcast, whose brassy



top is only equalled in brilliancy by the golden hue of his undercolour. The "stay-white" is only worthy of the name when after a season's breeding in the open even his neck and saddle hackles still remain to all intents and purposes untarnished. His opposite you may recognise from the fact that he will "take the sun" before he has discarded his second chicken feathers, and no amount of washing, shading, or dieting will ever make him white. Between the two extremes there may be said to exist four means, which, for want of better definitions, must be classified as "sappy-whites," "slightly-tinged whites," "whites that remain pure while shaded," and "sandy-winged whites."

The tendency to sunburn is not present in all white birds; some white doves that used to fly where they listed about my poultry-farm never had a feather upon them that was not spotlessly pure in colour, and the theory is here respectfully put forward that genuine albinos remain white, however exposed they may be to weather. The white varieties of poultry now extant, not being albinos, Nature has her revenge by putting every obstacle in the path of the interfering man who presumes to attempt the production of birds contrary to her own scheme of colouring. Now, discussing the various degrees of white in the quality of its purity, we come, of course, first to the "stay-white." Birds of this nature are, of course, rare and valuable, even amongst the oldest varieties of white fowls, whilst being practically non-existent in the less popular or most recently produced breeds. The chalk-white of this type is unmistakable to the practised eye, and whilst it is certain that the blood of most white birds contains some colouring pigment, probably there is none in the case of the stay-white, whose beak, legs, and skin often share in the prevalent paleness, even in yellow-fleshed varieties. To say that a stay-white remains absolutely unaffected by any weather is not strictly correct, for birds of this sort that may be washed, say, just previous to moulting, exhibit a certain tarnishing of plumage, not by any means sunburned, but still a something, which is, however, mere deterioration of the feather (owing to its age).

At no period of its existence does this genuine white exhibit any sappy or yellow feathering, and its value is greatly enhanced by the fact that it is usually prepotent, unless an outcross to a foreign strain is resorted to by the breeder, when the results must always be doubtful.

Sap in plumage is a difficult thing to define clearly, and a more difficult thing to understand. It is chiefly noticeable in white cockerels

three-parts grown, and the results of its presence is a creamy and even lemon-coloured appearance being given to the plumage by such young feathers as are just sprouting from the quill. Sappy birds may or may not eventually become pure in colour, but belong to a class by themselves, for it does not follow that bad-coloured specimens need ever have exhibited any traces of sap. That the uninitiated are not always able to differentiate between sunburn and sap is evident from the frequent confusion of the two words in show reports. Breeders, too, who should know better, often fall into the same error, but as this usually occurs when describing their own stock, it is perhaps less by accident than design. An example of this is provided in the following incident: Some years ago, being desirous of adding another white variety to my yards, I had occasion to order a trio on approval from a breeder. When they arrived I complained of the colour at the price asked, and received the reply that "the colour would come white in time, after they had run in the sun a bit." But the stain was due to sun and not to sap, so I returned the birds.

Different breeders have different theories regarding the way to treat these "sappy" birds, some holding that sunlight is necessary to draw the sap out of the feathers, while others rigorously shade their birds, and a third section holds that repeated washing is the best way of clearing the colour. It may well be that each is right, and that varying strains or breeds require varying treatment. There is at least one successful exhibitor of white fowls whose birds, after being washed, are set on perches to web out in the sunlight, but then, again, there are many more, equally successful, whose methods are the reverse.

Breeders must tolerate the presence of sappy feathers in their young and newly-moulted stock until they can afford to exclude all such birds from their breeding-pens; and, again, it must not be forgotten that there are varying degrees of sappiness, some birds only exhibiting a faint tinge in both hackles, whilst others are full of it from head to hock, the former being, of course, more tolerable than the latter for breeding purposes.

Leaving the question of sappy birds, we come to "birds that are not quite white," and "birds that retain purity of colour only so long as they are shaded." The majority of white birds exhibited to-day belong to one or other of these classes, and there is little fresh to remark about them and the quality of their colour. It may be considered that in treating of these birds under separate headings I am guilty of a distinction without a difference; it will,



therefore, be necessary to explain exactly what is meant: There are many birds which, although not of a stay-white nature, do not "take the sun" to any considerable extent, even if exposed, and these are next in value to the genuine whites, and come under the first of these latter headings. Again, it is comparatively easy to protect growing cockerels and moulting cocks so entirely from the weather that their colour will appear more or less pure in the show-pen; but, alas! many of these artificially-white birds seem to tan in an amazingly short time when finally allowed to run free. Thus it is that many a novice, who has rashly claimed a charmingly white specimen at a show, experiences bitter disappointment when, owing to his injudicious exposure of the bird, it fails to repeat its successes later on. No one can blame an exhibitor for staging his birds as white as he can get them, and the worst of it is there is no means of telling beforehand whether a bird of this description is a sun-resister or not.

Since the early days of White Cochins breeding, white birds (individuals most often, but sometimes strains) have cropped up from time to time exhibiting a reddish-sandy stain across the shoulders of the wings. These birds have nearly always been males, and it still appears to be a moot point as to whether they should be given the happy dispatch or bred from, since in other respects their colour is remarkably pure. Only last winter, when at a show, I was approached by a breeder, who asked me to give an opinion as to the advisability of breeding from one of these sandy-winged cockerels which he was then exhibiting. Before I could reply, a noted breeder of White Cochins who was passing, and had overheard, said: "By all means put him in the pen; I get my best-coloured birds from the mating of a red-tinged cock with pure-coloured hens." Now, my own experience was different, such a mating in one pen of White Wyandottes having once resulted in a flock of cockerels all bearing the red tinge, only much accentuated; so, in the end, the poor seeker after knowledge found himself no farther advanced. *All this is only another link in the chain of evidence to the effect that the same laws do not necessarily govern colour-production in all breeds or even in all strains of the same breed.*

It only now remains to deal with the last and worst quality of the white-plumaged bird—what may somewhat paradoxically be termed the "stay-yellow"; and he is soon dealt with—knocked on the head, in fact. Yes; let us not even discuss him, for he is better out of the way.

## THE BRITISH POULTRY FEDERATION, LIMITED.

AT the annual meeting of the National Poultry Organisation Society an important announcement was made by the President to the effect that on July 1 the marketing section was to be taken over by a new society bearing the name given above. Lady Salisbury said that the society had been compelled in the early days to undertake the responsibility of finding outlets for the produce of affiliated depots, but that it was always felt this must be a temporary arrangement, and that ultimately the business must be placed on a permanent basis, under the control of the depots. With the rapid increase in the number of these local societies the time had arrived when the question must be faced, and the necessary steps had been taken. In order,



MAJOR G. GLYN, D.S.O.

[Photo by Elliott & Fry.]

however, to help over the initial stages the N.P.O.S. had promised financial assistance for the first two years, by the end of which time it was confidently anticipated that the Federation will have been firmly established. Recognition was made of the cordial manner in which the affiliated depots had co-operated with the Executive Committee of the N.P.O.S. for adoption of the new basis of operations.

The British Poultry Federation, Limited, has been



registered under the Industrial and Provident Societies Act, 1893, and is co-operative in the truest sense, combining existing local societies for trading purposes. All the profits, after payment of five per cent. interest on capital and expenses, will be divided among the shareholding societies in accordance with the extent of their trading. The rules provide that the shareholders shall consist of (1) local societies formed for the purpose of com-



MR. VERNEY CARTER.

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bined marketing of poultry, eggs, and other produce, such societies holding one share for every £250 of annual sales; (2) the National Poultry Organisation Society, Limited, which body has the right to nominate three members to the General Committee and one to the Executive Committee; and (3) individual shareholders, who will nominate one member of the General Committee for every £250 shares held by them. The signatories of the rules are Colonel R. Williams, M.P. (Treasurer N.P.O.S.), Major G. Glyn, D.S.O. (member of Committee N.P.O.S.), Miss Olivier (South Wilts Depot), Mr. W. Reynolds (Street Depot), Mr. Henry Walton (Blackdown and Thorncombe Depot), Mr. Harry Bunting (Chipping Norton Depot), Mr. A. E. Jeffreys (Bradley and Horningsham Depot), and Mr. J. Gerard Kitson (Beaminster Depot), secretary, of whom the Preliminary Committee charged with the work of formation consisted of the last six, Mr. W. Reynolds acting as chairman.

This new development will, it is confidently expected, mark a further stage in the advancement of

the poultry industry in this country, and be able to carry on the work begun by the National Poultry Organisation Society to an extent impossible to a voluntary body not formed for business purposes. As has been well stated, its object was "training, not trading." It had, however, to lead the way and prove the soundness of the system it has advocated for the last dozen years. Without such an example we may claim that home produce would not occupy the place now held in our markets. The work done has been enormous, as all admit, and the grateful acknowledgments of all who are interested in poultry, in the national food supply, and the welfare of our people are freely given to Lady Salisbury and those who have been associated with her in their onerous and oft-times disheartening task of educating a nation into better methods. Co-operation, as applied to the sale of eggs and poultry, needs no apologist in these days. The speeches made at the annual meeting of the N.P.O.S. afford abundant proof, were any needed. To that end we freely recognise the labours of the President and the earnest band of supporters who have rallied round her ladyship in this work, many of whom have no personal connection with the poultry industry, but have been inspired by a sincere desire to serve their day and generation, and stimulated by the vast opportunities for extension presenting themselves. The transference of the marketing to the British Poultry Federation will, we believe, enable the N.P.O.S. to prosecute its mission with redoubled energy, and we look for greater results in the future than have marked the past.

We take an opportunity of giving portraits of some of those to whom are committed the new responsibilities in the Federation, with brief biographical notes.

Mr. Verney Carter has been for the past nine years organising secretary to the National Poultry Organisation Society, in which capacity he has had



MR. WILLIAM REYNOLDS.

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charge of the marketing section, and has worked arduously in placing home produce in the position which it now occupies. Prior to 1904 he had charge of the Stoke Ferry Depot, which he conducted most successfully. Mr. Carter, who is a Nor-



folk man, was for several years in Egypt, and is a member of the London Egg Exchange. He is continuing his services with the British Poultry Federation.

Major Glyn, D.S.O., who has accepted the position of honorary treasurer to the Federation, is a



MR J G. KITSON.

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member of the committee of the N.P.O.S., and has taken an active interest in that body. He won his D.S.O. in Africa, and was an unsuccessful candi-

date for Parliamentary honours in one of the Bedfordshire divisions at the last General Election.

Mr. J. Gerard Kitson, of Beaminster, Dorset, has acted as secretary to the Preliminary Committee of the British Poultry Federation. In 1905 he established the Beaminster Society, and has acted as secretary since its inception, having devoted a great amount of time and energy to it, to which is due the progress and success which have marked its history both in respect to the egg and poultry branches. Mr. Kitson was formerly engaged in commercial pursuits in London, and his experience there has been very valuable.

Mr. W. Reynolds, of Street, needs no introduction to readers of the POULTRY RECORD, as the story of his management of that most flourishing co-operative society, and of the laying competitions there, has been told frequently. He is an ardent and indefatigable worker. In the capacity of chairman of the Preliminary Committee of the British Poultry Federation he has had much to do in respect to the first stages.

Mr. H. Walton is manager of the Blackdown and Thorncombe Depot, in Dorset, which was established in 1903, and, therefore, one of the earliest co-operative poultry societies. His knowledge of the work made his selection on the Preliminary Committee go without question. His depot is not a large one, but has been of great service in West Dorset.

## "SHOOTING THE RED."

THE uncertainty of turkey-production is intensified during the first two months of rearing, although the risks are relative to the stock and the conditions under which they are bred, but with the appearance of the characteristic excrescences upon head and neck—the fleshy tubercles and conical carunculated growth—the birds may be hardened without much fear of decimation. Summer showers may be ignored, and, in place of the previous constant watchful attention, the birds may be safely left to go their own way within reasonable limits; and the more extended the limits, the better will be the progress and final result. In the freedom of fields and woods the poults will grow out at a rate impossible of attainment in any conditions of closer confinement, the naturally found insect and vegetable food doing more for growth and development than any hand-fed substitute; and the enforced activity incident to wide foraging being as beneficial to the digestive process as the destruction of pests, consequent upon their voracity, makes for the good of the farmer and his crops. The keynote of successful turkey-rearing is to be found in a progressive treatment, as regards feeding and the necessary changes in relation to extent and character of range; and when the poults begin to cover a more considerable and food-bearing area, the balancing of the dietary must be coincident lest the hand-supplied food disinclines them to search for that which is preferable. Upon an average farm, with its almost endless possibilities in this particular, very little food need be supplied to the growing turkeys when once they have appreciated their freedom, but that which is given them must be suitable.



MR. H. WALTON.

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## THE SELECTION OF STOCK.

THIS should not be an arbitrary performance, but a process, although more mechanical in the case of the old stock, on account of the age limits, than relative to the possibilities of the young. We know, or should know, the laying capability of the hens—either accurately by means of the trap-nest or approximately from observation—and we know, or should know, when they came into profit and when their profitable production may be expected to cease. We can judge the quality of the breeding stock by the stamina of the progeny and the general fitness for given purposes; and we know that this rooster is vigorous, whilst that one is constitutionally or otherwise unfit—if we have learnt anything from the hatching percentages of the season. The selection and rejection of the adult stock must, therefore, in the several departments of production, not only be relative to age, but to the general or particular utility of the individual birds that have not reached the limit. The reservation of a fowl for future stock purposes should be subject to the evidence of its season's record, irrespective of the age limit—although the latter factor must in every case receive due consideration, and in some circumstances of production it is the only practicable guide to a course of general action involving some loss as well as gain.

The breaking-up of breeding-pens and the releasing of hens from rearing duties are among the occasions when questions of selection and rejection, in so far as they concern such stock, should receive that particular attention which is the culmination of a gradual process of observation and record; and July offers favourable opportunities for the disposal not only of the rejected and surplus birds of the young generation, but also for the elders that have gone out of profit—when in suitable condition and before the commencement of the moult. From the marketing point of view it is desirable to clear out the birds of this description directly they become profitless (in the manner indicated), and have recovered any loss of condition—which is important in the live poultry markets—rather than to risk a subsequent participation in the conditions consequent upon a period of general "weeding out," when the supply is annually out of proportion to a profitable demand.

In addition to such operations, which are more or less automatic details of management, the selection and rejection of the growing stock demands attention—backed by discernment in addition to any possible knowledge of the ordinary course of breeding of any given stock. There may be a reasonable average expectation regarding the character of the young stock, but it is in every case subject to individual qualifications and limitations, the more or less accurate detection of which depend upon that habit of constant observation implied in the process—or gradual progress—of efficient selection and rejection. As there are lessons of the hatching season, so also there is much knowledge to be acquired from the rearing results. Are the chicks large or small of their kind? Are they sturdy and upstanding or weakly and uncertain? Are they contented or complaining? These are among the questions of the hatching season, but the growth and development are relative to the subsequent rearing period, although breeding, incubation, and

rearing are but divisions of one process, and to that extent inseparable for all practical purposes.

Relative to laying stock, provided the youngsters are constitutionally fit, and that growth and development have been normal for the purpose, the question of selection and rejection depends finally upon the family records in the matter of production. The preservation of stamina is essential to the permanence of a strain, and if the progeny of the best layers are wanting in this particular they must be rejected in favour of the next best, selecting those in which the highest record is combined with a sound constitution. Such a levelling up of the productive record of a flock may be less swift, but it is more certain in regard to perpetuity than the modern tendency to gamble in record-breaking.

The selection of stock for breeding table-birds and for the more general purposes of the average producer depends much more fully upon the indications of external appearance as regards size and shape, in addition to the observed rate of growth and development, which are all matters for very particular present attention. Legitimate size is relative, and must be considered with due regard to the object of production and the type of fowl used for the purpose. That which would be out of the question for the egg-producer may be looked for in selection for table and general purpose breeding, remembering, however, the influence of excessive growth upon reproduction.

Any preliminary selection of growing stock must necessarily be rather wide, allowing a sufficient margin for the unexpected in the subsequent development, otherwise the material for the eventual final selection for the renewal of the breeding stock will be insufficient for the maintenance of a high level of excellence. The most experienced are sometimes at fault, so that it is necessary to insist upon the folly of a too early or too close final selection and rejection; but, on the other hand, as no written instructions will adequately teach the inexperienced, the requisite knowledge must be acquired by constant observation. The rejection of absolute wasters at a suitably early period is, after all, a comparatively simple matter, and in the subsequent selection for the ultimate object the ideal must be always kept in mind—each individual being separately chosen with direct reference to the particular object to be attained.

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### Nelson, British Columbia.

The West Kootenay Poultry Association reports considerable progress. The question of co-operation is receiving attention, and a determination expressed to organise purchase of supplies and sale of products.

### A Yorkshireman in New Zealand.

The arrival of Mr. L. Rawnsley, son of the late Ben Rawnsley, is reported at Auckland, New Zealand. He took with him about fifty head of poultry and a few choice pigeons, as he intends to take up poultry-breeding on a large scale.

### Canadian Export of Eggs.

In 1902 Canada exported 1,163,510 great hundreds of eggs of the value of £346,648. Last year practically none were shipped; Russian eggs have been imported. Growing consumption is the explanation.



## PREPARING FOWLS FOR SHOW.

ALTHOUGH condition is not the only point which is taken into consideration when judging fowls at exhibitions, most adjudicators show a decided preference for those specimens which are placed before them in a cleanly state. Whether they are right or wrong in so doing matters little. The fact remains, and since that is so, it is advisable for fanciers to pay particular attention to the subject. In the preparation of fowls for exhibition there are many different phases which must be considered, but not the least of them is washing.

To the novice there are apparently few things which are more difficult to properly accomplish than washing a fowl. But despite this, it is really a much more simple undertaking than many poultry-keepers seem to imagine. There is no secret in it, and after a very little practice the whole process becomes practically as easy as washing a rag!

So great is the propensity of dust to adhere to the plumage of fowls, and more particularly, of course, to that of the soft-feathered breeds, that almost every variety requires a certain amount of dressing before being staged for competition. Different classes of fowls, of necessity, require different treatment. Game fowls, for instance, and male birds of a dark colour should not have their plumage completely soaked; but pure white fowls and those which have much white about them generally want a thorough washing prior to their appearance in a show-pen. And it is well to remember that buff birds of a light shade are usually much improved by it, while it is also extremely beneficial for all varieties (no matter what their colour may be) of the soft-feathered breeds. And the better such birds as those are washed the greater is their chance in competition.

Where only "a sponge over" is needed in the case of hens a clean handkerchief held in the steam of boiling water and smoothed over the feathers while it is slightly damp will generally prove sufficient, and it will not interfere with the webbing of the feathers. With cocks, however, in which the narrow hackle feathers do not need to web again so perfectly in order to look well, a solid and rather rounded nail-brush and a supply of clean warm water will be more serviceable. Rub the brush sideways repeatedly over every part of the hackle, back, sides, and saddle until the dirt is off, always brushing straight down the feathers.

I am, perhaps, "putting the cart before the horse." Prior to dressing any part of the plumage the "extremities" of the fowl should be cleansed. The legs and feet should be well and briskly scrubbed with soap and warm water by means of a nail-brush, and when they are clean it will be found advantageous to trim the edges of the scales with a fine hairpin, since dirt is very apt to lodge there and present an objectionable appearance. The comb and face should then be treated, but in this direction a loofah will, perhaps, answer better than a brush; and there is generally no need to use soap. The person who is undertaking the task should be very careful, however, if he is cleansing the head of a fowl with white lobes to see that they are not soaked; a slight application of pure grease or some preparation of cream will prevent the lobes being affected by the water. Hens generally do not look well if merely touched up, and their plumage

requires a thorough washing; but in this case it should be done with a sponge, warm water, and soap. A brush should not be used on a hen, since it will prevent all but hackle feathers webbing again. And soap should not be applied directly to the plumage; have it shredded, put into boiling water with a small piece of washing soda, and either boiled or whisked into a lather. The only care to be observed is that the feathers are not rubbed the wrong way—wash down the feathers, not against them.

When the feathering is clean all soap must be thoroughly washed out, and for this purpose the bird should be well swilled with clean warm water. No soap must be left in feathers, so if there be any difficulty in removing it add a small quantity of borax to the rinsing water. It is an essential point, since if any, even the least, soap remain the feathers in that part will appear draggled and will not web properly. The first process of drying is to have the plumage rubbed gently downwards with a sponge or with a piece of new flannel warmed before the fire. This will take much of the water out; but the fowl must be thoroughly dried, and it is here where many poultry-keepers fail to make their birds present the best appearance possible.

Much has been written of late anent the great tendency of the fancier to increase the size of his fowls. But in many instances, and particularly among exhibitors of such breeds as Orpingtons, Cochins, and the like, this increased size has been due more to the improved methods of drying the birds than to any undue fattening for exhibition purposes. In short, instead of putting the fowls into a wicker basket or on a perch before the fire, they have been allowed to dry in a patent drying machine, or, as it is generally known, a "fluffing-out pen." Such a contrivance has been recently put on the market by Messrs. Robert Toope and Sons after having been thoroughly tried by many well-known fanciers. The great advantage of this arrangement is that the plumage webs well; and it causes the fluff of the fowl, indeed the whole feathering, to "stand out" more than it would do if the bird were dried as previously mentioned.

As a rule it will be found that a complete wash removes the gloss from the plumage. For this reason, therefore, the operation should be performed some days before the show; and if during the intervening time a small quantity of linseed is added to the diet there will be a fresh secretion of oil, and the birds being kept perfectly clean in their training pens they will be in the very height of condition on show day. It is considered by some novices that for white or buff fowls gloss is not of much importance, consequently such birds are very often washed on the day before being exhibited. But it is beneficial to have a good lasting lustre on the plumage of all light-coloured fowls.

Many fowls, if kept in proper hard plumage, do not need a thorough wash; but loose-feathered birds always become comparatively dirty. On the other hand, such breeds as Cochins, and of later days Orpingtons, even though clean, are often washed merely, as has been mentioned, to increase their apparent size. In the case of light buff colour a good wash tends to darken the plumage, while with Silkies it decidedly improves the texture of the "silk" and gives the birds the fluffy appearance which is one of their chief characteristics.



## STREET AND ITS LESSONS.

By F. E. GREEN.

Author of "A Few Acres and a Cottage."

THE much-vaunted Dane does not triumph everywhere. We can, I think, give him a lead in co-operative poultry rearing and fattening, and that in the heart of deep-meadowed Somerset. The Street Co-operative Poultry Depot shows us that we could beat the Dane out of the poultry market entirely if there were a Street in every English county—this is not a pun—and we had as easy railway rates as the Dane has in his own country, where he gets his small consignments of farm-produce carried six times cheaper than we do in England.

In the co-operative production and distribution of eggs the success of Street is all the more amazing, because poultry is kept on land not favourable to poultry and 133 miles away from the chief market—London.

Neither the Minorca nor the Dorking thrives at Street, where there is about two feet of clay on the top of rock holding water like a sink without a hole. There were many things to be learned before success was assured at Street. A year or two ago the new-laid egg from Calais was still preferred by London merchants to the Somerset egg brought into the depot once a week and eaten at the breakfast-table ten days old. The old plan of leaving the farmers to bring in their eggs once a week to the depot had to be changed to that of going out to the farmers with a collecting van two or three times a week. Farmers were loath to bring in their

patched to market as "seconds" or "cookers," and not so many returned to members as altogether unfit.

The society has also learned that as far as the



**SOME JANUARY-HATCHED CHICKENS AT STREET.**

A partly open-fronted type of house is used. [Copyright.]

table-bird department is concerned the best stock birds to keep are Sussex, Faverolles, and Buff Orpingtons, and when the depot buys eggs from members to incubate for rearing as table-birds, it insists upon a cock of one of these three breeds being run with the hens.

Mr. Reynolds, the secretary, who talks as much egg-lore in a day as a Farmers' Club would talk in a week, contends, after twelve years' experience with all kinds of breeds, that the Buff Orpington is the best all-round utility bird, and that the Faverolles runs it a close second. He himself now keeps only these two breeds on his very efficiently conducted little farm, where 200 hens are trap-nested. If any member chooses to send into the depot scraggy yellow-legged Leghorns for fattening he has to accept one penny a pound less for his bird. The price usually paid is 1s. 9d. for a twelve-weeks-old bird, which, when fattened, has averaged 3s. 1d. per bird for the last year. The sending in of eggs in winter is encouraged by an ingenious system of paying a higher dividend on winter eggs.

I saw the interesting new brooder-house erected in

the picturesque orchard, where 40 or 50 small brooders, each containing 50 or 60 chickens, made a pretty sight. The new brooder-house is capable of mothering 600 chicks. Whilst I was there an



**REARING AT STREET.**

[Copyright.]

eggs even once a week during the haymaking season, and though the change has involved the upkeep of a collecting van it has paid in that there is a saving of labour in the testing-room, fewer eggs being dis-



order had come in from the North of Scotland for twelve-weeks-old birds weighing not less than 3lb. apiece at 3s. 9d. The order was promptly executed.

In capable hands the rearing and fattening department made a net profit last year of £200, and as I watched the plucker at work I was struck by the effective and new method adopted of presenting birds for the table. He simply slits the web of each foot, round which a string is attached, "bunches" up the bird, flattens the breast with the flat of the hand, and then places it immediately on the stone shelves to cool.

The main lesson, however, to be learned at Street



PLUCKING IS MADE A FINE ART AT STREET.

[Copyright.]

is that poultry-keeping as a side line pays the small man even under adverse circumstances when he co-operates instead of competes with his fellows. And the Street Society is not content only with organising the poultry industry in its own district. It is taking a hand in the national organisation of the poultry industry, for Mr. William Reynolds, its secretary, has been appointed temporary chairman of the new British Poultry Federation, which, we hope, will in time beat the foreign egg entirely out of the British market.

## CAUSES OF DISEASE.

By FRED. W. PARTON.

IT is a very old saying that prevention is better than cure, and as to the truth of this statement there cannot be two opinions. It can only be made effective, however, by a knowledge of some of the causes of disease, so that the poultry-keeper may know what dangers to avoid, what to do under certain circumstances, and what not to do under others. It requires some experience to know when the border-line is reached and to discriminate so as to know when benefit ceases and danger is inevitable. As a simple example, animal food, at certain seasons and at certain periods in the life of fowls, is of the greatest value; but if it be given in excess it becomes a danger and a fruitful cause of disease. A further instance illustrative of this point is in connection with in-breeding. It is frequently claimed that this is responsible for much disease, in that the birds have a weakness which owes its origin to the consanguineous mating of the parents. This is quite possible, and as a matter of fact it is probable, when close breeding is carried on by a man who does not possess the knowledge to enable him to select the right birds for the purpose. It may be imagined that in-breeding *is* in-breeding, whether it be conducted by the inexperienced novice or by the breeder of life-long standing. Certainly the actual in-breeding is the same, but results are entirely different. The novice merely breeds from related stock without any thought as to the next generation. The man of experience can use stock of much closer relationship than were the birds used by the novice, and not only does no harm accrue from the union, but advantage in some specific direction is gained without the penalty of any bodily weakness, since the breeder knows exactly the qualities to look for in the birds that are to be mated.

Mention may be made of the three chief causes of disease—negligence in housing, inattention to sanitation, and overstocking the land. There is no end to the evils of bad housing, there being so many diseases that owe their beginning to the manner in which the fowls are housed, diseases which perhaps started in a very mild form, but often are the forerunner of much more serious complaints. Roup is one of the most deadly scourges of the poultry-yard when it once gets established. This may frequently be traced to what appears to be merely a slight cold. The eyes and nostrils have a sticky discharge, and the birds may have a cough, which goes to strengthen the impression that it is merely a cold, and will probably disappear naturally—as cold will without treatment. In a few days, however, the unfailing signs of roup are apparent, and it can no longer be mistaken for simply a cold. The contagion of the disease is sufficient—even if the symptoms are not—to prove otherwise. In addition to roup, catarrh and other forms of cold could one and all be prevented, since they are usually caused by a draught in the sleeping quarters. Freedom from this is an absolute necessity if the inmates are to be kept from colds and the evils that follow in their wake. Badly fitting joints, or boards not closely joined together, or a downward current of air, is each quite sufficient to cause trouble, and yet they can be so



simply remedied with very little trouble and practically no expense.

The material of which the house is constructed more often than otherwise is too thin, the wind almost blowing through; in such houses as these the birds are always roosting in a cold atmosphere, which is far from conducive to their well-being. Ventilation is of first importance, since this is doubtless a great factor towards the maintenance of health. The aim should be to secure adequate ventilation, at the same time avoiding a draught. It is equally important that cleanliness be strictly observed, for this will assist very considerably in keeping the air sweet. All the internal fittings, such as perches and nest-boxes, should be simply constructed, and made so that they can be easily and quickly removed. This will ensure the attendant reaching all the corners and crevices when cleaning. The perches may rest in slots, cut in the framework of the house, and they are thus easily taken out.

Frequent renewal of the litter also goes far to keep the house in a sanitary condition. In all I have said in connection with housing, I have studiously avoided anything that is not of the simplest nature, with the intention of showing that it is not palatial houses, expensive patent ventilating air-shafts, and other luxuries that are necessarily required to keep fowls in good, healthy condition, but, rather, attention to the salient points already mentioned. This does not need outlay, but merely a little common sense brought to bear to minimise the danger of disease.

How many fowls will the land carry without danger of disease arising from contaminated soil? This is a matter upon which it is difficult to advise, as an answer given might admirably suit the conditions of some, while it might be quite fatal to the condition of others. This is more a matter which must be determined by each poultry-keeper for himself. The breeds vary considerably as to the amount of space they can with safety occupy. The nature of the soil, whether light, heavy, medium, drained or undrained, the amount of shelter-herbage that is grown, and methods of housing are all governing factors. The tendency of most poultry-keepers is to overcrowd, and this is a mistake made by the experienced as well as by the beginner. There is no doubt that the temptation in this direction is one that it is not easy to resist. It must, however, be resisted if the birds are to thrive. Impure ground is an inciting cause of liver disease, cholera, enteritis, diphtheria, and, among chickens, that devastating scourge, gapes. Excellent remedies for the purification of the land have appeared from time to time in the columns of the ILLUSTRATED POULTRY RECORD, and there is no necessity to repeat them now, since I am writing of the cause of these diseases, which may all be prevented by reducing the number of fowls on the land.

The present is an excellent time of year to carry this into effect, since the chickens are mostly of an age when they can be drafted out, according to the object for which they are intended, whether for market or stock purposes. In addition to this they have now reached an age when their characteristics are sufficiently pronounced to enable one to select the best, and the wasters can be disposed of, which will in many poultry-yards considerably reduce the number.

## FANCIERS AND FANCY MATTERS.

By WILLIAM W. BROOMHEAD.

*Mr. Fred Entwisle's Bantams—Brown Sussex—Frizzle Bantams—The Variety Bantam Club—Chickens Again—A Great Game Fancier—A New Malines Club—The Blue Langshan Club—July Shows.*

### MR. FRED ENTWISLE'S BANTAMS.

WHILE in the North of England recently I took the opportunity of visiting Calder Grove, near Wakefield, and inspected the valuable live-stock which Mr. J. Fred Entwisle keeps in the grounds surrounding The Firs. Mr. Entwisle is probably the best-known breeder and exhibitor of Bantams in the world, and his stud is one of the oldest, if not in fact the oldest, in existence. It was established by his father, the late Mr. W. F. Entwisle, as far back as 1856, and seldom since then have Bantams of this famous strain been "out of the money" at the best events of the season. Attached to The Firs are several acres of light wood and good meadow-land, and although the whole of it is not given over to the birds there are several spacious pens allotted to them; and it is not surprising that Mr. Entwisle can take a good team to the shows when a suitable classification is offered. One finds nearly all varieties of Bantams at this well-known Yorkshire establishment, including Old English and Modern Game, Rose-combs, Pekins, Frizzles, and most of the more recent breeds, the Partridge Wyandottes being particularly strong. There were several chickens out when I was at The Firs, and altogether the hatching season had been a good one.

### BROWN SUSSEX.

I am glad to hear from the annual report of the Brown Sussex Club that progress is altogether satisfactory, since not only has the variety vastly improved in show points, and particularly in the colour of its plumage, but its utility qualities have not been overlooked. Instances are given showing that the Brown Sussex can more than hold its own as a table-fowl when in competition with other breeds, including Orpingtons, and in the very centre of the fattening district. It is also interesting to learn that some good breeding-pens have been dispatched to Scotland, and others as far as the West Indies. It is the ambition of the club to make the variety not only most useful but also popular. The hon. secretary of the club is Mr. J. T. Ade, jun., Grove Hill Farm, Hellingly, Sussex, and he will be pleased to forward a copy of the report to anyone applying to him.

### FRIZZLE BANTAMS.

Mr. E. J. W. Buckpitt, of Sparacre, Bridport, Dorset, president of the Variety Bantam Club, is appealing for subscriptions towards a Frizzle Bantam Challenge Bowl or Bowls that he is anxious to raise in memory of the late Mr. George Reyner. As he says, no useful purpose would be served by detailing the scheme in the columns of the Fancy Press; but if any reader who holds the memory of Mr. Reyner dear will communicate with Mr. Buckpitt he will be grateful.



## THE VARIETY BANTAM CLUB.

Writing of Bantams reminds me of the Variety Bantam Club Year-Book for 1911, which contains much instructive and interesting information for Bantam fanciers, since beyond the usual particulars that appeal to members only several readable

shows the opinion of the members will be taken during the year as to whether their interests would not be better served by offering trophies and special prizes at one of the most important events of the season. Full particulars of the club may be obtained of the hon. secretary, Major G. T. Williams, Burton Joyce, Nottingham.



A TYPICAL BLACK ORPINGTON HEN AT THE BOLTON MODEL POULTRY FARM.

articles are contributed to it by well-known breeders and exhibitors, while a number of illustrations depicting members' favourite birds are also included in the book. Turning to the report, it is somewhat discouraging to read that owing to lack of support the club show at Sheffield resulted in a loss; and in view of the constant losses incurred by club

## CHICKENS AGAIN.

Chickens of the year have turned up in goodly numbers so far this season, and as I hinted in last month's notes the progress made by some has been "prodeegious." At Prescott Show (May 18) there were nine cockerels and ten pullets, the winners in



the former class being a Barred Plymouth Rock, a Black Wyandotte, and a White, and in pullets a Silver Wyandotte, a White Wyandotte, and a Buff Orpington. At the Devon County Show at Newton Abbot (May 21) the entries of chickens were as follow: Hard-feathered cockerel, four, two Indian Game, divided by a Pile Game Bantam; pullet, five, the three winners being Indian Game; soft-feathered cockerel, sixteen, a Brown Leghorn, a Black Orpington, and a White Plymouth Rock; pullet, seventeen, two Silver Wyandottes, followed by a White. At the "Bath and West," at Cardiff (which opened on May 31), there were six classes for chickens. In the first, for Cochin, Brahma, Dorking, Plymouth Rock, Langshan, Orpington, or Sussex cockerel, there were nine entries, and the winners were a White Cochin and a couple of White Orpingtons, while in the pullet class for these breeds, eleven entries, the three prizes went to Orpingtons—a Buff, a Black, and a White. In the third class, for Minorca, Ancona, Leghorn, Ham-burgh, French, or Wyandotte cockerel—a decidedly mixed classification—there were thirteen entries, the winners being an Ancona, a Brown Leghorn, and a White Wyandotte, while in the pullet class the best three birds were a Black Ham-burgh, a White Wyandotte, and a Faverolles. The Any Other Variety cockerel class contained five entries, with a Malay, an Indian Game, and a Rhode Island Red; and in the pullet class (three) the first prize went to a Rhode Island Red and the second to a Malay, third prize being withheld. It is worth noting that in most of the foregoing classes the heavy and supposedly slow-growing breeds generally came out "on top." However, there were some very promising and genuine youngsters exhibited, although one of the most forward of the specimens on show at one event was rung with a ring foreign to its breed. Possibly this escaped the notice of the Poultry Club representative.

#### A GREAT GAME FANCIER.

To win over a thousand cash prizes in one season, and under seventy different judges, is not easy of accomplishment in these days of keen competition, yet such a record was put up by Miss R. B. Babcock, of Rimington, last year. The exact number of prizes won by this famous yard in 1910 was 1,042, and most of them were secured by Old English Game and Old English Game Bantams. As can be imagined, to do this there must be a vast establishment, and such indeed is the one over which Mr. R. S. Marsden holds sway, since, although Miss Babcock is a very keen fancier and takes a personal interest in her birds, the arrangements at Rimington Farm, at which the poultry stock is located, are under the sole control of Mr. Marsden, and worked by him and his family. Upwards of a thousand head of Old English Game are kept, of which more than two hundred are Spangled Old English Game Bantams; but in addition there are Aseel, Indian Game, and Andalusians, and a few Black Orpingtons, Black Wyandottes, and Langshans. Single birds are rarely sent to the shows, and if an event is worth patronising one can generally rely on seeing a strong team of Miss Babcock's fowls on view. Thus at the late Manchester Show, which, as I have previously mentioned in the ILLUSTRATED POULTRY RECORD, is one of the classical events of the year, a team from the Rimington yards carried off the president's

cup for most points in the show, in addition to two special prizes and nine firsts, while at the Palace, to mention only one more of the many important fixtures at which Miss Babcock's birds were exhibited in 1910, the wins were five cups, four special prizes, sixteen firsts, eleven seconds, and eight thirds.

#### A NEW MALINES CLUB.

It is suggested that a Ladies' Malines Club shall be formed in order to enhance the interest already being taken in this grand all-round utility fowl and get it better known and appreciated, as it deserves. It is the object of the club to preserve the type and all the economic qualities, and not to encourage breeding for feather alone. At the same time, the club will do its best to induce show executives to provide classes for Malines as a means of bringing them directly before the eyes of the public. A considerable number of ladies have already promised their support, and other women interested in the breed should communicate with the hon. secretary, Miss A. Lassen, of Shantallagh, Maidenhead.

#### THE BLUE LANGSHAN CLUB.

"Better late than never." The annual report and balance-sheet of the Blue Langshan Club was somewhat late in being presented—I saw a copy of it towards the end of May—but the delay was occasioned by a matter entirely out of the secretary's hands. However, it is pleasing to hear that the special offer of eggs and breeding-pens at reduced rates that the hon. secretary was able to make last season owing to the generosity of certain members resulted in a gratifying increase in the membership, although the liberal classification provided at the principal shows did not meet with the support anticipated. It is hoped, nevertheless, that since a similar offer of eggs and pens was made this year and the number of breeders of the Blue Langshan has increased, classes will be better filled during the forthcoming season.

#### JULY SHOWS.

Among the numerous poultry shows announced to be held this month I may mention Ashton-under-Lyne to-day, Kilkenny 4th, Londonderry 4th and 5th, Scunthorpe (Lincs.), Old Colwyn (Denbigh), and Wootton (Liverpool) 5th, Redruth (Cornwall) 5th and 6th, Grimsby 6th, Doncaster and Dalry (Galloway) 7th, Prestwich (Lancs.), Laurencekirk (N.B.), Dewsbury (Yorks), Cupar (Fifeshire) and Galashiels (Selkirk) 8th, Exmouth (Devon) 11th and 12th, Birkenhead (Cheshire) and Horsham (Sussex), 12th and 13th, the Royal Northern (Aberdeen) 13th, West Auckland (Durham) 15th, Bexley Heath (Kent) 19th, Waterford 19th and 20th, Tunbridge Wells 20th and 21st, Rochdale and Scarisbrick (both in Lancs.) 22nd, Worsthorne, Burnley 25th, the "Highland" at Inverness 25th to 28th, Leicester 26th and 27th, the "Great Yorks" at Rotherham 27th, 28th, and 29th, and Bolton (Lancs.) 29th. In connection with Tunbridge Wells it was rumoured early in the season that the show would drop out this year. It may be remarked that the poultry classification is greatly curtailed, the Bantam section and classes for Old English Game being cut out and others reduced. The total number of classes is sixty-one as against eighty-four last year, seventy-six in 1909, seventy-two in 1908, and seventy-eight in 1907.



## PRODUCTION OF AND TRADE IN POULTRY.

[In view of the interest which has been awakened by Mr. J. W. Hurst's article in the June issue of the ILLUSTRATED POULTRY RECORD, we have pleasure in giving the following paper, which was read by Mr. Hurst at the Dublin Poultry Conference, as well as some letters from prominent poultry experts.—EDITOR.]

IN my opinion one of the most satisfactory facts in connection with this Conference is the prominence given the subject of this paper. A long and intimate acquaintance with the methods of those engaged in this production as a specialised branch of the industry has served to convince me that the rearing and fattening of table-poultry require and deserve some form of practical encouragement and organised control, in a measure at least proportionate to that accorded the production of eggs. It may be granted that those who have worked in the latter direction have had more than enough to occupy their most strenuous attention, and that as egg-production is of greater relative importance, its claim to priority is thereby justified; but it must equally be admitted that the claims of table-poultry are considerable, and rest upon a reasonably sound economic basis. As in other departments, however, organised marketing and practical instruction in the methods of preparation best calculated to meet the requirements are matters of primary importance. The present opportunities and future possibilities are great, and the profitable nature of the production cannot seriously be contested, provided the quality of the produce is good and that it can be marketed cheaply and quickly in sufficient quantity and suitable continuity, subject to such regulation as may be imposed by the fluctuations of seasonable demand.

Outside a few districts of very limited area producers of table-poultry have none of the advantages that accrue from co-operative industrial operations, and where the circumstances are at all favourable as regards railway rates and facilities, there exists a very general ignorance of what is required. The economic waste that annually results from the continual and extensive marketing of undeveloped and lean chickens is an example of the prevailing lack of knowledge among producers, and a continued cause of complaint on the part of salesmen. Moreover, the cost of production is very commonly made excessive by the use of unsuitable feeding stuffs, and the feeding period is unduly prolonged by the employment of cheap foods. In the great majority of cases the individual producer is further handicapped by the smallness or irregularity of his output, the difficulties of transit, and the cost of carriage. I do not think that the remedy for such disabilities lies in the direction of largely-increasing the individual output, even with the benefits that result from greater skill and experience, but that the future of the industry mainly depends upon the grouping of producers in their several districts, provided the localities are generally suitable for the purpose, and that the markets to be served are easily accessible. I am consequently hoping that those who are more familiar with the methods of organising the egg trade will adapt their experience to the needs of the table-poultry branch of production, and that as a result of this Conference

some practical scheme may be formulated for development in this direction. An improved egg-production has been encouraged, and in a large measure achieved, by means of laying competitions; and the establishment of collecting depots has done much to further the interests of those who undertake this production. No corresponding amount of attention has been devoted to the production of table-poultry, and very little encouragement of a practical nature has been accorded the producers of Great Britain, although in Ireland poultry-fattening has to some extent been furthered by the provision of special training facilities and grants.

### CHICKENS.

Whatever the course of action decided upon and adopted in the general connection, the importance of teaching producers all that is involved in the production of marketable chickens should be regarded as a primary necessity. The trade in table-chickens is continuous, and rearing should be practically an all-the-year-round occupation in which very many more might profitably engage than at present contemplate such continuity in their operations. The limiting of rearing to the months that are favourable to natural growth and development is frequently made to serve—as far as may be—for a demand which is necessarily largely met by the supply of birds long past their best marketable age and condition, a method that is neither satisfactory to the consumer nor sufficiently profitable for the producer. Market values rise and fall with some approximation to regularity, and to realise the best prices of the year it is as necessary to produce winter chickens as it is to produce winter eggs; and it is as necessary to market birds that really are chickens as it is to market new-laid eggs, if the enhanced value that attaches to quality and condition is to sufficiently raise the average of the annual returns. The holding over for the spring demand of birds hatched in the autumn is in a measure comparable to the holding over (by means of preservatives) of eggs from one season to another, but it is a method that can never be as satisfactory or profitable as a more immediate production for the season of demand. Although it is not an easy production, it is less difficult than is commonly supposed. Poultry-keepers have considerably altered their views about winter egg-production during recent years, and there is every reason to suppose that winter chicken-production is capable of extension when the subject is given equal practical attention. Efforts in this direction have tended too much to the employment of artificial methods in an extreme degree, and the resultant disappointment has been as inevitable as it has been disastrous to progress. Examples of failure have been discouraging, irrespective of causes. Nevertheless there is a safe and proper use of mechanical appliances; and the



limitations as well as the uses of incubators and brooders are among the subjects in which practical producers require some guidance. On the other hand, it may be shown that the rearers of the South-Eastern Counties of England with whom winter chicken-rearing, although inadequate to the requirements, is a matter of ordinary routine, rely almost entirely upon natural methods—which are possible of imitation.

The general aim in profitable chicken-production must be the attainment of a suitable killing condition within a relatively short period; and birds should be ready for the final fattening process when from three to four months old, according to the character of the rearing season. The attainment of such results involves the use of suitable breeds and feeding stuffs, the former being in some circumstances more easily obtainable than the latter. Both the fowl and the food are produced to perfection in Sussex, where long specialisation has given the necessary experience, and the combination provides an example that is worthy of consideration in any endeavour to extend this branch of the industry.

#### DUCKS.

Here again I would suggest that it is the production of young birds that is chiefly required, of ducklings to meet the demand between February and June, rather than of ducks for the later trade. A quick turnover is one of the important considerations to which due weight must be given in any attempt to develop the poultry industry. The production of turkeys is a comparatively long-period affair, but as it is only suitably and profitably undertaken by occupiers of a more considerable acreage—who are presumably men of more substance—this factor is of less importance than in the case of the large number of small-holders and occupiers to whom we must look for the bulk of our home-raised poultry. Quick-growing chickens and quick-growing ducklings are among the minor products that may be made extremely useful to small agriculturists on account of the quick turnover and the frequency of the monetary returns. The demand for older birds is not likely to go unsatisfied, and the small producer should be primarily interested in the duckling production, which may be successfully undertaken in circumstances and under conditions that make it possible for many who have insufficient accommodation for birds of any other description. The methods that have so long been associated with the Vale of Aylesbury, which may be described as the home of this special production, are largely adaptable elsewhere; and the same district has given us the breed that is most suitable on account of its economic qualities, of which quick growth is not the least.

#### GEESE.

This is a production concerning which rather more caution is required, having regard to the relatively limited nature of the demand and its more unequal distribution. It is, however, a favourable circumstance that the demand for large geese has to a considerable extent given place to one for goslings during the season of their production, thus suiting the previously noted necessity for a quick return, supplying—within limits—the incentive for the production and marketing of young birds. The likelihood of this production becoming excessive is, how-

ever, in some measure hindered by the fact that it can only be profitably undertaken in favourable situations—viz., where there is a sufficient grazing acreage which cannot otherwise be more profitably utilised; nevertheless the production is sufficiently remunerative to make an increased output worth while, if the regrettably narrow limits of demand could be sufficiently extended.

#### TURKEYS.

Experience and the general course of events indicate considerable and increasing opportunities for turkey-breeders, but inasmuch as a relatively large area is a chief necessity of this production, any increase in the output must practically depend almost entirely upon the farmers (in contradistinction to small-holders) and their recognition of the facts. The long rearing period makes it essential that the range shall be suitable, as regards the sufficient supply of natural food; and the nature and habits of the turkey also make a large space requisite for the maintenance of health and the progress of growth and development as well as the production of that condition that fits the birds for the finishing process that precedes the killing date. This is consequently more particularly a farmer's question, and it unfortunately happens that a very large number of agriculturists regard the turkey with disfavour, more often than not on account of its supposed inherent delicateness.

If turkey-production is to be sufficiently increased it will not only be necessary to show the profitableness of the undertaking, but—and previously—to demonstrate the fact that where the stock is delicate it has generally become so owing to the mismanagement to which it has been so commonly subjected under domestication. The demand is favourable to what is a remunerative production amid suitable surroundings, but the most serious hindrance to progress in this branch is the existence of a very common prejudice.

#### FATTENING CENTRES.

The proposed establishment of fattening centres is a definite proposition, the carrying out of which upon an organised co-operative basis may eventually solve many existing difficulties, although there are several obstacles to the successful materialisation of such a scheme. Writing on this subject in the "Journal" of the Board of Agriculture for April, 1910, I suggested what appeared to me to be the factors making for the success or failure of such establishments; and as the conditions do not appear to have materially changed, I cannot perhaps do better than refer briefly to the arguments then advanced. In three important particulars my experience is supported by the Eighth Annual Report of the Department of Agriculture and Technical Instruction for Ireland, wherein it is pointed out that a fattening station cannot be successful unless adequately supplied with suitable birds and feeding stuffs, readily available in the neighbourhood, and unless conducted under highly efficient management.

The sufficient supply of lean birds is an obvious essential that needs very little insistence, whether relative to marketing requirements or the sufficient employment of skilled labour, although this point has not always been fully appreciated by individuals who have attempted isolated operations. The supply should, as far as possible, be available from more or less local sources, in order to minimise the sup-



plementary cost of production, which in existing centres in East Sussex is rendered burdensome to the extent of the double carriage paid on birds imported from Ireland and distant districts in England and Wales—the requirements in this instance having outgrown the capabilities of the local rearers, to whom the number of fatteners is disproportionately large.

It is plainly opposed to the economics of the industry that between 700 and 800 tons of lean live chickens should annually bear the cost of carriage from Ireland to Sussex, in addition to that subsequently incurred in transit to London as dead poultry. I may add, as a curiosity of cross-trafficking and consequent addition to cost, that I have known instances of fatteners in Norfolk being under the necessity of importing birds from Ireland whilst, at the same time, Norfolk rearers were exporting birds to fatteners in the South.

There are also serious abuses in connection with the traffic in lean chickens which, unless checked, must tend to restrict production at its source. The rearers are in some instances almost ground out of existence under the heels of rapacious collectors, agents, and rings of buyers; whilst in some of the more remote, but nominally local, rearing districts the higglers unduly increase their margin of profit by taking full advantage of the fact that many of the rearers are needy and ignorant cottage women.

The supply of suitable feeding stuffs presents a difficulty in many otherwise favourable situations, involving questions of local milling or carriage—the methods of the former being frequently inadequate and the cost of the latter prohibitive. Co-operation would, however, overcome this difficulty, and would also largely reduce the cost of carriage on the finished produce.

Skilled labour is essential, but although the supply is at present very limited it would tend to increase in proportion to permanence of demand and the maintenance of a sufficiently high wage.

In addition to these requirements of production there is the question of the sufficiency of demand for produce of the best fattened description, and it is a matter of common knowledge that outside London this particular trade is very limited. It is perfectly true that fattened poultry is more economical than unfattened, as well for the consumer as the producer; but buyers do not yet sufficiently understand that the larger proportion of flesh is cheap at the enhanced price. Well-fattened fowls of fine quality are becoming more fully appreciated in the provinces, but the growth of the demand is gradual; the establishment of fattening centres must, consequently, be adequately proportionate to the education of consumers. It would appear, therefore, that the success of such a scheme must largely depend upon its gradual and judicious introduction, both on account of the limitations of supply (as regards lean chickens) on the one hand and of the provincial demand (for fattened fowls) on the other. There is little doubt that small beginnings would tend to develop, but the development cannot be forced; consumers would in time increase the demand, and the requirements of fattening centres would equally induce additional local rearing. But the interests of the two branches of production—rearing and fattening—must be safeguarded by an organised co-operation.

## MARKETING.

All the details of preparation involved in the production of a marketable appearance need to be much more commonly understood than they are at present, much otherwise first-class produce failing to realise its intrinsic value owing to ignorance of the extrinsic requirements of markets. All such details are best taught by practical demonstration, which should include—in addition to the use of the cramming machine—the methods of killing, plucking, stubbing, shaping and packing.

The system of marketing at present in vogue is in some particulars as advantageous as it is disadvantageous in others, and probably the chief consideration that weighs with producers is the usual promptness with which salesmen in the large markets make payment for consignments; but it is unsatisfactory to know that it is a common practice for salesmen to draw cheques in accordance with their own valuation of the produce—irrespective of the price paid by the buyer. When this is done there would appear to be no justification for the deduction of commission charges. The method is, however, very generally accepted, but that it gives rise to suspicions is shown by the formation of a Protection Association of Fatteners in Sussex, although it is a question as to how far such a body can effectively control the actions of the salesmen. That abuses exist is generally admitted, and the question of reformation is one of the most serious requiring adequate solution in the general interests of producers, who at present appear to be supporting a quite unnecessary number of middlemen of various descriptions.

Any effort to regulate and equalise supply and demand must necessarily introduce the subject of cold storage, the treatment of which must depend in a large measure upon the course generally adopted with regard to the whole system of marketing, the details of which cannot be sufficiently dealt with within the limits of the present purpose. Indeed, the very necessary restrictions of this paper have throughout prevented more than brief reference to some of the more important influencing factors in the projected development and improvement of table-poultry production, but I hope that among the several suggestions I have ventured some may be of practical use to those who may endeavour to build this branch of the poultry industry upon a sounder economic basis than that upon which it now so precariously exists.

## SOME OTHER VIEWS.

*To the Editor of the ILLUSTRATED POULTRY RECORD.*

DEAR SIR,—Mr. Hurst's article in the ILLUSTRATED POULTRY RECORD touches the subject in a way which I fully support. My contention is that too much attention has been, and is being, paid to the subject of egg-production, while the equally important question of increasing and improving the supply of high-class table-poultry is practically ignored. I am a regular exhibitor of dead table-poultry at those shows where classes are provided; but there is an extraordinary want of support to such classes. So much so is this the case that in many instances the classes have been cut out of the schedules of several of the largest shows. The Royal Agricultural Show has no class for dead



table-poultry, while at the Bath and West of England Show just concluded only fifteen entries were catalogued in five classes. All this shows a lamentable lack of support to what ought to be a most interesting and instructive feature at agricultural and poultry shows. It is a pity that more is not done in the way of providing classes at shows for table-poultry reared and fed (not crammed) by *bonâ-fide producers*, excluding the professional poultry-fattener. Something of this kind is done at the Dairy and Smithfield Shows, and usually results in well-supported classes. I should like to see more shows opening classes on these lines, appealing specially to their local producers within a given radius.

There is no doubt that increased production of table-poultry would lead to reduction in values. At the same time, the demand for the *best* poultry is an ever-increasing one, especially in the months of April, May, and June. During that time especially fatteners are rarely able to obtain sufficient supplies of good-class chickens for fattening. Providing birds of suitable varieties (such as the Sussex, for instance) were kept, a ready sale could be found for chickens among the fatteners practically at any season of the year, but especially in spring and early summer. It is in regard to keeping the right sort of fowl for fattening that advice is most required. In my opinion any of the varieties of Sussex fowls meet the requirements admirably, and are also very fair layers of tinted eggs. They are hardy birds, and the chickens mature quickly.

I have known many people who were once rearers of chickens who have taken up egg-production chiefly because the work was less, and the risks of mortality smaller than in rearing for market purposes. I think if proper instruction in up-to-date methods of rearing could be more generally obtained it would be found that rearing a quantity of chickens yearly for table purposes would be a very useful addition to the income of any farmer or small-holder.—Yours faithfully,

FRANK H. WHEELER.

Bridge House, Marden, Kent.

To the Editor of the ILLUSTRATED POULTRY RECORD.

SIR,—Mr. J. W. Hurst's excellent article in the June issue of the ILLUSTRATED POULTRY RECORD strikes a note which should reverberate throughout the country. That the production of table-poultry deserves concentrated attention on the part of all who are concerned in the development of our industry is unquestionable. It is equally true that this aspect of the subject commanded less attention at the Dublin Conference than did eggs. But I would submit that such questions run in cycles. We are now in the full swing of efforts to develop and improve the egg side of things. That is merely incidental. There is, however, a proportion in these questions. So far as foreign supplies are concerned the relative proportions have been for some years in the neighbourhood of seven to one in favour of egg imports. How far that represents the relative consumption we cannot actually state. I am inclined to think that home production of poultry bears a greater relation to that of eggs. Such is the case in Ireland. The figures given by the Right Hon. T. W. Russell at Dublin were: Poultry, £927,035; eggs, £2,744,138; which is in values one to three. Thus we see that across the Irish

Channel table-poultry bulk much more largely proportionately to the entire shipments than do supplies from foreign countries and our Colonies to Britain. The question thus raised is, in any case, of sufficient importance to warrant Mr. Hurst's query and to justify what he says.

At the same time, there are reasons for this apparent neglect as for most things. For some years after 1892 I gave a great amount of attention to advocacy of extended production of higher-grade table-poultry, as did others, preaching in season and out of season that much could be done outside the South-Eastern Counties. That was not altogether welcome. After an address at one place I was criticised because, so it was said, such extension meant adversely affecting a small local industry—one which provided a satisfactory living for many hard-working individuals. It was a narrow view to take, and has certainly not been justified by the results. It is not too much to say that, in spite of largely increased supplies from Ireland and foreign countries, the demand for good table-poultry is greater than ever it was before, and is likely to continue to grow in the future. As a result of these efforts fattening establishments have been put down in various counties, some of which have done fair work, others have been abandoned. Whilst, therefore, the average quality of English poultry, apart from the Sussex areas, duck-breeding in Bucks, &c., and turkeys in East Anglia, has advanced to a considerable degree, we must admit that with a few exceptions table-poultry production on industrial lines has not grown to the extent which might or ought to have been. Such is one of the problems left to be solved, and I hope, for one, that we may be able to deal with it in the near future.

That there are good reasons which can be adduced is apparent. One of the primary of these is that the home egg trade required organisation and extension to a greater degree. Those who can look back a dozen to fifteen years will bear me out in saying that then the condition of the English egg trade was bad indeed, equally as to regularity of supply and quality. We had to set ourselves to break down the antiquated and thoroughly unsatisfactory methods of marketing, and by securing more adequate returns give that incentive to increased production which was required. The need was all the greater because of the remarkable improvements made in Denmark and elsewhere, so that our producers had a live, strong opposition to face unknown before, and which they must meet unless they were prepared to let the trade pass entirely out of their hands. What the result has been it is needless for me to say. It may be true that the number of Co-operative Egg Societies is small. What is of greater importance is the influencing of private traders to adopt better methods, combined with a rapidly increasing demand at enhanced prices for the better qualities of eggs. That is the true test of the work of the last dozen years.

A further reason is found in the fact that the egg trade is immediate in its results. An egg is in itself a finished product, needing no further manipulation. Therefore, all that was necessary to secure the advantage of proximity or otherwise of consumers, ready to buy as it is, was adoption of a better system of marketing. The demand was



there. The buyer wanted the egg as laid by the hen—nothing more or less. The poultry-keeper had not to consider whether it should find a buyer who must treat it in some way. The householder, by the medium of a retailer, was in view. Thus the production of eggs afforded the most rapid mode of making poultry pay. It was easier to keep hens to lay eggs than to rear chickens for market.

The third explanation is found in the fact that whilst all sections of the country are suitable for egg-production, that is not so with table-poultry, which, by its specialised nature, must be of slower growth. And, also, that without fattening centres to finish off the birds it does not pay to rear out-of-season chickens, &c.; whilst, on the other hand, these fattening centres cannot hope to succeed without a sufficient supply of suitable birds. To that end the breeders over a given area must keep a class of poultry which will be most profitable to the feeders, so that they may be able to pay good prices. It is at that point where many efforts have broken down. It says much for the determination of the Street and Beaminster depots that they have done something in that direction—on a modest scale, it is true—but encouraging as a beginning. What I hope to see is that in suitable districts efforts shall be put forth to disseminate the right classes of poultry over a wide area and lead farmers and others to make flesh the first and eggs the second consideration in their calculations.

There is another aspect of the question which has had great influence—namely, that whilst retailers will buy eggs direct from producers, local depots, or traders, they prefer, in London at least, to purchase dead poultry in the wholesale markets. That raises a question upon which there is much to be said. The whole subject of market charters and rights demands attention. Vested interests fight against us. Why should grants made by monarchs centuries ago fetter us to-day? Why should they hinder developments demanded by modern conditions? It is, however, very difficult so long as these exist to combat those interests. We want open markets to which fatteners and producers can send or go and conduct their own business.

So much by way of excuse or justification. We have now to consider what should be done to press forward the production of more and better table-poultry. I can promise Mr. Hurst that the National Poultry Organisation Society will do all in its power, provided it can see clearly the line which promises to effect the purpose. The time is ripe for such an effort. We can bring influence to bear upon those who can help and are willing to do so. But the way is by no means clearly defined. If those who are interested will bring to bear upon the problem their powers of construction, there is no reason why an immediate step forward should not be taken. In that case Mr. Hurst's disappointment may lead to important developments. I have some ideas upon the subject, but cannot set them forth at the present time. I submit, however, that the question when considered must not be limited to the needs or opportunities of South-Eastern England, but a wide view be taken of the entire country, and deal with all branches of table-poultry.—Yours faithfully,

EDWARD BROWN, Hon. Sec.,

National Poultry Organisation Society,  
38, Queen Anne's Chambers,  
Westminster, S.W.

*To the Editor of the ILLUSTRATED POULTRY RECORD.*

DEAR SIR,—The steady progress of Ireland's poultry and egg industry revealed at the strikingly successful Conference recently organised in Dublin cannot fail to have impressed everyone present that great progress has been made. As one who was privileged to attend, partly as representing the Poulterers' Company, London, and partly in my capacity as merchant and salesman, I may be allowed to give your readers some few of my impressions. For more than forty years past I have been largely in touch with the poultry producers of Ireland, and since 1894 have taken a keener and closer interest in the industry. I was able on many occasions, at the instance of Mr. T. P. Gill, Mr. Campbell, Mr. Gorden, and others, to find some experienced Sussex fatters for the Department's stations, and I have watched the really pleasing energy and skill with which the people engaged in this industry have put forth most heroic efforts in the achievement of substantial success. To the stranger and familiar alike, the surprising activity of the Irish must be instantly apparent. Has there ever been, I ask, such a thing as stagnation in any direction? Out of suffering and misery good has often sprung, and the Irishman, cradled too frequently in the midst of starvation, has carried to the farthest corners of the earth the industry, the quick intelligence, the unfailing humour, and, I may add, the good humour of his race, in order to claim for himself, as the Kaiser said of the Germans, his rightful place in the sun. Have not the gifted sons of Ireland made their mark high up in the legal, military, and journalistic professions throughout the Empire? And, again, has there been such a thing as stagnation? Has there not been manifest skill and success in the lace, tobacco, shipbuilding, and other great industries of Ireland?

It would be surprising to find apathy or stagnation in connection with the particular industries to which Sir Horace Plunkett and the Irish Agricultural Organisation Society are directing their energies. The potential strength behind any given crusade can never be gauged in advance. One good movement often leads to another, and of all the surprising developments in the domain of small tenures in Ireland, none, I venture to predict, will be more important and encouraging than that of poultry-breeding. The energy and skill of the people are there; all that they need is the instruction and organisation now being brought to their very doors by the energetic authorities.

From personal acquaintance with several of the instructresses I can truly say that, like the male teachers, they are carrying out their work in the most efficient manner. Their patience and diligence in directing the willing efforts of their pupils cannot fail to prove great factors in the expansion of the industry, and this is all the more important when so many women are dependent upon a home occupation for a livelihood. From my personal observations of the district which most needs immediate improvement in the stock of table-poultry, I would suggest that the Department should turn its attention to the distribution of nine or ten months cockerels of the following types: Dorking, Game, Plymouth Rock, Lincolnshire Buff, Brahma, Red Sussex, Speckled Sussex, also Light Sussex, White Orpington, and Faverolles. These would bring about a marked and beneficial result, in one season



showing an immediate profit to the Irish poultry-producer. Moreover, the annual expense involved would be comparatively slight. As the Rev. Canon Barry, D.D., of Ballyraggit, Co. Kilkenny, so forcibly remarked at the Conference, organisation is immeasurably more necessary for the poultry industry than for any other, and on the precise lines indicated in Mr. Anderson's paper. What co-operation and direction into proper channels have achieved for the English poultry-producers by the joint efforts of Lady Salisbury and Sir Walter Gilbey, Bart., has been abundantly proved during the past twelve months. I was glad to notice at the Conference that Mr. George Little, of Manchester, struck the right note when, in complimenting the Irish Department of Agriculture upon its magnificent work, he at the same time made an appeal on behalf of the Irish shippers, whose efforts throughout the past in securing the regular expansion of this industry ought not to be overlooked. They should not, he remarked, discourage the shippers, who he thought were out of touch with the co-operative movement, possibly because their assistance had not been asked, and he urged the Organisation Societies to consider the case of that honourable class of men.

I will only add that the Irish poultry-producer will, with his quick insight, soon come to the conclusion that by sending his produce direct to the London salesman he will realise the highest possible price in the world's markets.—Yours faithfully,

CHARLES E. BROOKE,

Past Master Poulterers' Company, London.

June, 1911.

## AMONG THE BIRDS IN JULY.

By J. W. HURST.

### PULLETS.

The importance of characteristics in breed and strain are nowadays very commonly understood, and some attention is usually devoted to the careful selection of the breeding stock in relation to the requirements of this particular purpose, so that birds of a suitable variety are used, the pullets are hatched at a favourable time, but are in many cases subjected to a subsequent neglect—resulting in an ultimate disappointment. Failure results from neglect or delay in such an essential as separation according to sex, age, or the object for which the birds are being reared, as well as from carelessness in the matter of feeding, the all-round pressure of summer work suggesting the undesirable method of giving the same food all round in order to save time at the moment. Indiscriminate feeding will probably suit some of the fowls, but cannot benefit all equally—as should be apparent to those who consider the feeding of their other stock more carefully. The requirements of the mature and the immature, and of chicken and egg-production, cannot be satisfied in the same manner and with food of the same character—without essential modifications. Pullets and chickens for market may be similarly treated up to a certain point, but a too free and long-continued use of soft food, for example, will tend to promote laying before a desirable maturity has been attained; and from the age of about three months the pullets should be largely grain fed, and the change to soft food at a subsequent period will then have the required result.



A PEN OF LIGHT BRAHMAS.

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## FEATHERS.

There is, as a rule, not much difficulty about feathering when the chickens are run at liberty over a sufficient extent of grass and suitably fed; but where the management is defective or the youngsters wanting in stamina there may be some set-back, from this cause, among some of the later birds—especially if artificially reared. Digestive disorders generally appear to accompany or precede difficult feathering, and, whether the connection be real or not, prevention may generally be secured by good feeding and a healthy open-air method of rearing, digestion being aided by a constant supply of green food and sharp flint grit.

Bare-backed hens are not uncommon objects at this season, the loss of feathers being generally the result of activity on the part of the rooster and the too limited number of hens with which he is penned. To continue mating under such conditions is unprofitable, and may prove very injurious to the hens. But before dealing with such a matter the cause must be correctly determined, and the reason suggested must not be confused with feather-plucking or eating—trouble that often originates in the presence of parasite mites or insects, all of which are more or less troublesome in summer.

## BREEDING.

Although the appearance of bare-backed hens and other indications suggest that some pens require breaking up without delay, the dispersion of the breeding stock having in such cases been too long deferred already, the persistent rearer and marketer of chickens must consider summer as well as spring breeding. The period presents several difficulties, many otherwise suitable birds being out of condition, commencing their moult, or unfit for mating from one of the several causes that are operative at this season. For the general purpose of the chicken-producer the most suitable birds may usually now be found among those that have recently finished rearing an earlier brood. Such hens have had a reasonable rest from egg-production and have generally benefited from the time spent in incubation and the subsequent running over the fields with their chickens—and some amount of liberty should be allowed the hens when rearing. The conditions are, therefore, favourable for a recommencement of laying, and if these hens are mated with a vigorous male that has also had a rest from the breeding-pen, fertile eggs should be produced in sufficient numbers to meet the needs of a rather difficult breeding period. The feeding should, of course, be suited to the purpose, but much depends upon the choice of situation for the breeding-pen. The birds should preferably be penned in a cool and sheltered place, not too dry, provided the surface is drained suitably to carry off possible summer storm-water; and if the available land makes such a selection possible, the enclosure should include grass together with some underwood and a running stream.

## Indiana Eggs.

The Purdue University, Indiana, states that last year eggs were produced in that State to the value of twelve million dollars (£2,400,000), but that two million dollars (£400,000) were lost by the farmers through bad systems of marketing.

## THE BACK-YARD RUN.

By A. T. JOHNSON.

AS everybody's back-yard or garden varies in shape, aspect, or other particular, one cannot do more than give the amateur a general idea as to what to aim at in erecting his house and run. In the first place, I may say that the idea of an open run (that is, one uncovered to the sky) can only be entertained where the ground is very dry, the slope or drainage good, and the space large. In fact, I never recommend the use of such a run unless it can be made large enough to divide into two, so that one side may be cropped while the other is being occupied. It is only thus that it can be kept pure and wholesome, for a grass run, under the circumstances, is out of the question. But with a smaller run, covered over and with a hard floor, matters are much simplified, for not only is such a one more easily cleaned, but it is more hygienic, and, in proportion to its size, can take more birds than an open one.

The amateur may, therefore, in most cases decide upon having a roosting-house and run under one roof. He may make them any size he likes so long as he remembers that not less than twelve square feet of run are allotted to each fowl, the roosting compartment, under such conditions, being rather less than half the size of the run. The type of house generally selected for these small runs is what is known as the "lean-to," and it is, for convenience and economy, usually placed against a wall at the end of the garden, with the higher side of the roof to the back. Now, a moment's thought will convince anyone that the latter arrangement is a wrong one, for the roof of a house so placed will effectually prevent any sun from entering and the interior is most difficult to ventilate. A slope from back to front is very well in a vinery or cucumber frame when the sun can pass *through* the roof, but in a lean-to poultry-house it is just the reverse. The sun beats on the roof in summer and nearly bakes the hens, and in winter, when it is most wanted, they get scarcely any rays at all.

Moreover, when using a house with the high front, the attendant is spared the infliction of a backache every time he wishes to enter, not to mention sundry bumps on the head and raindrops down the neck. Both house and run are under the one roof, and all sides save the front must be closed so as to avoid through currents of air. The front portion of the roosting-place should be boarded one-third of the way up and fitted with a sliding, adjustable shutter, but that of the run need only have *woodwork* to a height of 18 in. from the floor. The remainder of the open part must be covered with fine-mesh wire-netting. If the swing shutter is not used, oiled canvas or sacking blinds should be placed on the outside all along, to be drawn down in very severe weather so as to throw off driving rain and snow.

Perhaps the most important part of any such house and run, and one that must be given the first attention, is the floor, which must be both dry and rat-proof. Cheapness, consistent with durability, is what we all want, and one of the best floors that ever I saw was made as follows: The earth was dug away from a space about 1 ft. wider than the house and shed, each way to a depth of 1 ft. This was filled with old rubble and builders' refuse, and



after being beaten down firmly covered with a layer of coarse gravel. Over this some fine-mesh wire-netting was stretched and so cut that it overlapped with about 12in. to spare on every side. Then on the top of that a strong layer of asphalt made of tar, pitch, coarse gravel, and lime was laid. When dry the house and run, built on a strong bottom frame, were placed on the asphalt, and the overlapping edges of wire-netting were drawn up all round and stapled to the woodwork. That was a cheap floor, thoroughly rat-proof and dry, and as durable as granite. The house which it supported was not, of course, in part formed of the adjacent wall, and this for many reasons. In the first place, a garden wall or boundary fence is often irregularly built, or so made that it is impossible for one to utilise it as part of a wooden lean-to, and yet keep all dry, draught-proof, and free from rats. If the

and time is no object it is cheaper to buy the parts of the house in sections, and any good appliance firm will supply exactly what is required from measurement. But for the guidance of those who would like to put their own house up I would advise 2 by 3 quartering for frame and uprights and  $\frac{3}{4}$  to 1in. boards (tongued and grooved). The skeleton of quartering must be made first, and all boards nailed on the *outside* perpendicularly. The roof may be of the same material, felted and tarred (the tar should be applied hot and have 1lb. of dissolved pitch added to each gallon), or it may be made with very thin matching covered with corrugated iron. The latter should not be used without a lining of wood or felt. Use the best, heavy gauge, wire-netting (1in. mesh) for the open part, and make the nests so that the attendant can get at them by means of a lid from the outside.



A BACK - YARD RUN.

Its faults will be apparent after reading the article.

[Copyright.]

surface of a wall is cemented and made to form the back wall of the house it often serves its purpose well, but it is doubtful whether it will be cheaper than wood in the end. Then a wooden house and run standing on the asphalt may always be removed by the tenant, if need be, whereas difficulties may arise over the matter, were it fixed to the wall by plaster of any kind, such as cement.

A house that slopes towards the back should have a wide eave and a gutter to carry off rain-water, and this important point is much more easily managed with a house that has its own wooden back standing a few inches away from the garden fence.

Anywhere where wood is cheap the amateur carpenter can put up a house such as I have briefly described without detailed directions, which often make wearisome reading. But I will say this, that unless material can be obtained at a moderate price

The perches must be movable, resting in slots, and they are best quite round and about 2in. in diameter. Flat perches cause crooked breasts, "duck feet," and twisted toes. A "dropping-board," sprinkled with sand, should be placed under the perches so as to prevent the excrement dropped during the night from getting among the litter, and it should be movable also. In warm and sheltered places the partition between the house and run, in which a door is fitted, may have the upper part of its highest corner of open wire-work, but in the north it may be entirely closed, the window (with adjustable shutter) at the front being sufficient for ventilation and light. A run, such as I have described, to hold six or seven birds (the size of Minorcas) should be 7ft. by 12ft. on the ground, 6ft. high at the front, and 3ft. 6in. at the back. The roosting accommodation ought then to be about 4ft. in width, the other dimensions being, of course, as above.



## RELATIVE IMPORTS OF EGGS AND POULTRY.

THE *Economist* has published a letter from the hon. secretary of the National Poultry Organisation Society, giving some remarkable figures as to the changes which have taken place in respect to imports of eggs and poultry from British Colonies, foreign countries, and Ireland. The year 1904 is accepted as the basis, by reason of the fact that it marked the maximum as to quantities of eggs and in values of poultry from abroad, and records of exports from Ireland.

By means of index numbers, taking 1904 as representing 100, a very valuable table is given for a period of thirty years as to eggs:

IMPORTS OF EGGS FROM BRITISH COLONIES AND FOREIGN COUNTRIES (Index Numbers).			
YEAR.	TOTAL QUANTITIES.	TOTAL VALUES.	AVERAGE VALUES PER 120.
1881	31	34	108
1882	34	35	105
1883	39	40	102
1884	41	43	103
1885	42	43	103
1886	43	42	98
1887	45	45	100
1888	47	45	95
1889	48	46	96
1890	51	51	95
1891	53	52	96
1892	56	56	101
1893	55	57	102
1894	59	56	94
1895	63	60	93
1896	66	62	93
1897	70	64	92
1898	72	66	91
1899	81	75	92
1900	84	80	94
1901	85	82	94
1902	95	93	98
1903	99	98	98
1904	100	100	100
1905	94	101	106
1906	94	105	111
1907	93	106	113
1908	91	106	116
1909	88	107	121
1910	92	108	117

From this table, says Mr. Brown, it will be seen that in total quantities there was a steady increase in imports to 1904, since which year there has been an equal decline to 1909, with a slight recovery in 1910; that in total values, however, the increase has continued throughout, and the maximum was reached in 1910; in average values there was a decline from 1881 to 1898, which was the year of lowest average prices. This was almost entirely due to the greater volume of cheaper quality eggs coming from Russia and Southern Europe. In 1890 French supplies were 30 per cent. of the total imports, whereas in 1910 these were less than 5 per cent.

A second table shows the trend of imports from individual British Colonies and foreign countries

from 1901, from which it is seen that Denmark, Egypt, the Netherlands, Russia, and Sweden have increased their supplies as compared with 1904, whereas all other countries have decreased. The remarkable feature is that British Possessions in 1910 only accounted for one-thousandth per cent. of extraneous supplies. In 1901 we received from the Colonies eighty-five millions of eggs and in 1910 less than a quarter of a million.

In respect to poultry, figures are given never published before. Norway alone has increased its supply, but the quantity is relatively unimportant. All other countries have declined, the United States to nearly one-third. Here again British Possessions are very small, only 0.7 per cent. of the total imports.

On the other hand, Ireland has steadily advanced. From 1904 to 1910 the quantities of eggs have increased by 9 per cent. and the total values by 34 per cent. In poultry both quantities and values have grown in the time named by 44 per cent.

Mr. Brown urges that these figures emphasise the importance of home development.

## THE MODERN CRAZE FOR SIZE.

To the Editor of the ILLUSTRATED POULTRY RECORD.

DEAR SIR,—I have read with great interest the discussion on the modern craze for size, and as the owner of the pen which was bottom in the last Utility Poultry Club's Southern Laying Competition I write to tell you a few facts which may be of interest. I picked the four White Orpington pullets I sent from twenty-eight March-hatched birds. In my ignorance I chose the heaviest, as I thought they would be the most forward and would therefore lay the earliest. I have not the report by me, but if I remember rightly they were the heaviest birds in the competition. They managed to lay seven eggs in the four months. Now, I had two pens of their own sisters, eight in No. 1 and sixteen in No. 6. This is their record:

No. 1 Pen, 8 Pullets.				No. 6 Pen, 16 Pullets.			
Nov.	...	...	90 eggs.	Nov.	...	...	103 eggs.
Dec.	...	...	138 ..	Dec.	...	...	226 ..
Jan.	...	...	94 ..	Jan.	...	...	199 ..
Feb.	...	...	82 ..	Feb.	...	...	147 ..
404				675			
Average 50.5 eggs per hen for four months.				Average 42.18 eggs per hen for four months.			

I know this is nothing to boast about, but it is good enough to show that the strain is a good average laying one and not as bad as the four pullets in the competition would lead one to believe. My own birds at home were not forced in any way. When I received the four pullets back from the competition I was astounded at their weight in comparison with my own birds. Of course if they were not turning their food into eggs they would put on flesh. Perhaps some kind critic may say that management would account for the difference in their egg-production, but I can lay no claim to any such knowledge or experience as is possessed by the gentleman who managed the competition.—Yours faithfully,

LESLIE G. MOIR.



## "DANSK ANDELS ÆGEKSPORT."

By W. A. KOCK.

EGG-PRODUCTION now occupies a very important share in the Danish farmer's sources of revenue. Naturally the smaller peasants evince the greatest interest in their poultry, as they depend more upon the "egg-money" than do bigger farmers, who, even in Denmark, often think that a hen is too small an animal to make any fuss about. Yet probably no time is more profitably used than that given by the farmer to his hens.

It was only in 1895, when the Danish Farmers' Co-operative Egg Export Association, whose native designation is given above, was founded, or that the shipments of eggs from Denmark assumed any great importance. Producers realised that if they did not take the work into their own hands the market would be spoiled by inferior qualities of produce. Everyone understood that prices would be higher, and, as a consequence, eggs were held back in the hope of securing greater returns. Such a custom was ruinous in the long run, and destructive of confidence on the part of buyers. Hence the object was to collect the eggs under control and export them in the speediest possible manner. At the present time about one-fifth of the eggs exported from Denmark pass through the hands of this powerful society, which is thus virtually able to control the trade, and indirectly to exercise considerable influence on the English market. It embraces about 550 affiliated local societies, with a total membership of some 40,000 poultry-keepers, and it operates over the greater part of the country.

Each of these local branches has its own depot, and appoints a collector, who is paid a small commission, generally about 3d. per long hundred for the eggs collected. All these are purchased by weight—a system which in itself induces the farmer to keep an improved breed of poultry and to carefully select his breeding stock. Rules of the most stringent nature are imposed to ensure that no eggs shall be handed to the collector which have not been laid since his previous visit, infringement of which is punished by fines, and, if persisted in, by expulsion from the society. As all the eggs are stamped with a number representing the local society and the registered number of the individual member from whom these are obtained, it is always possible to trace the history of any defective egg from the breakfast-table at which the egg is broken to the Danish farmer in whose establishment it first made its appearance. It says much for the system adopted, and speaks well for these Danish co-operators, that complaints as to the quality of eggs are very seldom made.

From the local depot the eggs are forwarded to one of the central packing stations which have been established in the principal towns having convenient and direct communication with the various English ports. At these centres the eggs are carefully tested, graded into five classes in accordance with the size, are branded with the export society's registered trade mark, and are packed with wood-wool in large cases holding 1,440, to be dispatched by the first available steamer. So expeditious is the work that they can be landed in England when about a week old, which fact explains the favour with which they are regarded and the prices obtained for them. The collection and dispatch are so ar-

ranged as to prevent any avoidable delay—a condition of the first importance in dealing with produce which is of so perishable a nature. At the same time, co-operation ensures that the maximum price shall be received by the farmer, as there are no middle profits to be met out of the money paid by the English merchant who purchases the eggs. The price actually received by the members on delivery is fixed from time to time by the committee of the Dansk Andels Ægeksport, according to market quotations, and at the end of each year the net profits of the society are distributed among the members in proportion to the value of the eggs which each has supplied.

## SOUTH AFRICAN EGGS.

SIGNS are not a-wanting that the egg industry of South Africa is soon to put a large amount of money into the pockets of the farmers. As Mr. J. W. Jagger, M.L.A., pointed out in the course of a recent speech, in 1909 Denmark exported to the United Kingdom alone eggs to the value of £1,800,000. This represents a wide field, which might be tapped by South African farmers, who, once they had the industry operating on sound and systematic lines, could take steps to become firmly established on the English market. But co-operation is required. In competition with the farmers of Denmark those of South Africa have much to learn in the way of collecting, grading, and marketing, and there appears to be a strong case for the appointment of a poultry expert to go among the people and organise the industry. So long as farmers work as individuals there is little hope of South Africa becoming a serious rival to Denmark, but once these individuals begin to see in unity the fundamentals of a great profit-bearing industry, the egg of Denmark should to a large extent be displaced on the English breakfast-table by the egg of South Africa. In the Union there are some fine strains of poultry, and while, of course, there is room for improvement in that direction, the first essential is to organise. If the farmers are organised as they are in Denmark and the necessary enterprise is displayed, success can hardly withhold her prize from the venture.—*South Africa*.

## The Leghorn King.

The *Adelaide Register* (South Australia) calls Mr. A. H. Padman, of Hyde Park, the Leghorn King, as a result of his remarkable records in laying competitions in Australia from 1905-6 to the present time. He has shared in twenty competitions, and his record is nine wins, four seconds, two thirds, five times unplaced, but only failing twice to score a prize of some sort. In 1907-8 he made a world's record with a score for six birds of 1,538 in twelve months. Mr. A. M. Prain, when in Australia, bought a pen from this remarkable flock.

## The American Poultry Association.

The struggle between Boston, Mass., and Denver, Colorado, for the next meeting of the American Poultry Association has terminated in favour of the western town, but only by two votes.



## JULY NOTES FOR AMATEURS

IN this glorious summer month a good deal of heat is generally experienced, and the sleeping quarters of poultry must therefore be well ventilated. Fowls would keep in better health and condition if they were allowed to sleep in open sheds all the summer, with nothing but a roof above them. This, however, is not always convenient, and the best alternative is to have houses in which sliding shutters may be let down, so that the front is practically open. By keeping birds in such houses it is possible to harden them so that they become practically immune from colds.

Shade is another necessity, and those who make small permanent poultry-runs in the garden or elsewhere would do well to plant some young fruit-trees, for the sake of the shade as well as the fruit. But for those who require a quick-growing annual plant I can recommend the tall sunflower. If a strip of ground is dug and manured all round the east, south, and west sides of the run just outside the wire netting, the plants can be put in 18in. apart, and in a short time they will form a dense, tall hedge, and provide splendid shade all day. Sunflowers, however, form a double purpose, for when the seeds are ripe the heads should be cut off. The fowls will peck out the seeds, or they can be threshed out by beating the heads on the ground. Sunflower seed is of an oily character, and very useful for growing feather, but should be used sparingly.

Thanks to the long days and plenty of flies and other insects, chickens should be making good growth. Care must still be taken, however, to keep them free from vermin. It often happens that chickens stop growing just about this time, and the cause may usually be attributed either to insect pests or overcrowding. The latter is a frequent cause of failure. Keep reducing the stock as the birds grow or they will be spoiling one another's chances. Broad flat perches may be put in the houses for well-developed chickens over four months old, and it should be seen that the birds roost upon them every night, or those which remain on the floor will be fouled by those above. Keep all perches on the same level, or the birds will crowd on to the top ones.

If any old birds are moulting, as they soon will do, it will be a good plan to put them into a well-lighted outhouse, so that they can be fed generously by themselves. The growth of new feathers is a severe strain upon a bird, and it should have three good nourishing feeds a day, with scraps of meat and vegetables, and about an eighth part of hemp seed with the hard corn. A good tonic for moulting hens is known as Douglas Mixture, the recipe for which is 1oz. of diluted sulphuric acid and  $\frac{1}{2}$ lb. of sulphate of iron dissolved together, to which is added two gallons of spring water. This mixture should be given in the drinking water in the proportion of a teaspoonful to every pint of water, and it will be found an excellent pick-me-up for birds that get very low in condition.

There should be a considerable saving in the food supply at this time of the year, and those who are fortunate enough to be able to turn their fowls out for a run can keep them at very little cost. Many amateurs in country places can turn their birds on to a field, or even the roadside, and they

will find that a few hours of liberty each day will do a great amount of good, besides effecting a saving in corn. Even in small, confined runs fowls do not require nearly so much food now as they did in the early spring, and of what they have a large proportion should consist of vegetables. Poultry-keepers can utilise a lot of waste garden produce for their fowls, and lettuce and cabbage leaves, onion tops, and even pea and broad bean pods are very welcome. The latter are more readily eaten when boiled soft. Even the humble stinging nettle makes an appetising dish for mixing with scraps and soft food when it is boiled. The evening meal of hard corn must not, however, be forgotten. Oats are the best grains for this season, as wheat is too dear and barley and maize too heating.

This is the best time of year to get rid of old hens in view of a fresh stock of young birds being purchased in the early autumn. Moulting will be general very shortly, and if hens are allowed to fall into moult it will be practically impossible to sell them until they are through it, by which time they will have cost nearly a shilling each to keep.

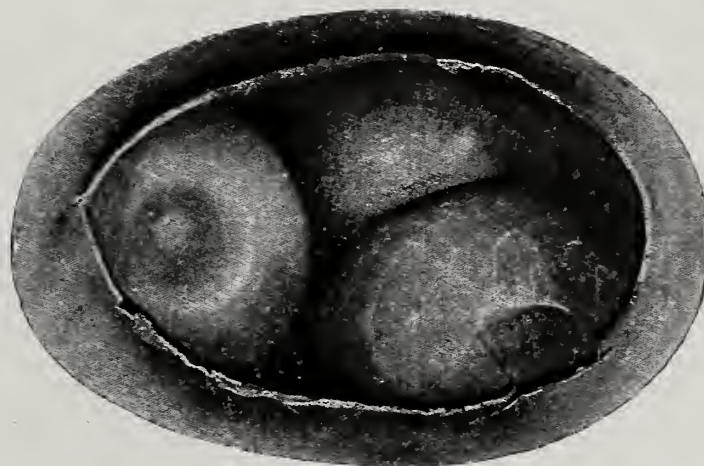


FIG. 1.



FIG. 2.

## TWO EGG MONSTROSITIES. [Copyright.]

Fig. 1 shows three yolks within one shell.

Fig. 2 shows one perfectly-formed egg within another.



## FATTENING ON A FARM.

By A YORKSHIRE FARMER.

THE demand for eggs is greater in England than it is for table-chickens, and the remuneration is probably greater for supplying the former. At the same time, it is my contention that, without in anywise diminishing the quantity of eggs for market, more could be done in the way of table-chickens, and at very much enhanced prices. In the South-East of England poultry-fattening is an important industry, and one that gives employment to quite a large number of the rural population in one capacity or another. It is not, however, on the lines of fattening as adopted in these parts that I urge the poultry-keeper to undertake the preparation of table-chickens, since in this case it is purely a business, and must be conducted separately. It could not be carried out to any great extent by the man who also includes in his operations other branches of the industry. It is more to the general poultry-keeper that I would refer, the man who pays little or no attention to the preparation of the surplus marketable chickens. I do not even mean to suggest that it is necessary to keep any special breeds for the purpose, but rather I would suggest to him to make the best of what is within his reach. When I say no special breed for the purpose I do not mean to say that when non-sitters only are kept an attempt should be made to fatten them, since this would be quite impossible, even by the most skilled of fatteners. The general-purpose type of poultry, especially the White or Buff Orpington and the Faverolles, lend themselves splendidly to fattening. The poultry-keeper whose primary object is egg-production usually has one or more of these general-purpose breeds among his flock, so that there are always culls to be had for market. The prices, however, are very rarely satisfactory, and complaints are frequently heard that it is not worth the trouble and expense of rearing cockerels to an age when they are fit for killing at the poor prices they realise. The explanation is very simple. The birds have not been prepared in any way. They were not improbably "run down"; perhaps they were not killed properly, nor previously starved, with the result that the flesh is of a brownish-red colour and the crop and intestines are full of food. Plucking has not been carefully done, and the general appearance of the birds when placed before the buyer is not such that they will command a good price.

Instead of treating the birds in this manner, let us suppose that they were kept within a limited space for three or four weeks before they were killed. There is on most farms a shed of some sort, a stable or a disused byre, which can be used for the purpose; as a matter of fact, almost any place will do, so long as the birds can be kept quiet and away from those enjoying liberty. It is surprising how much they will gain in weight during the period that they are fastened up. Not only is there this increase in weight, but the flesh improves in quality to a considerable extent. The food during this time of confinement should consist of nothing but meal, for the birds not having the same amount of exercise as hitherto are unable to digest corn. Even could they do so, it would be inadvisable to give it to them, since it does not lay

on flesh so rapidly, or of the same quality, as does properly prepared mash. Where ground oats are to be had, it is the best of all foods, since not only does it contain the properties for fattening, but it whitens the flesh, which is a great point in its favour, so far as appearance goes. When, however, any difficulty is experienced in getting ground oats, two parts barley meal and one part middlings answers the purpose. It will be found a distinct advantage if the meal, or meals, as the case may be, is mixed with separated milk.

The birds should be starved twenty-four hours before killing, for in this way the body is emptied of food, which not only makes the fowl easier and more pleasant to truss, but it keeps the meat fresh for a much longer period than would otherwise be the case. Neat plucking and careful packing deserve attention, and these go far toward obtaining better prices for the finished product.

## METHODS OF CRAMMING IN FRANCE.

AS to the methods of fattening adopted in France, it may be accepted that some system of increasing the quantity and quality of flesh is regarded as indispensable, and we can be content to accept this without question. The methods followed are: (1) feeding upon flesh-forming foods under ordinary conditions; (2) cramming by boluses of food, or *patons*; (3) cramming by a funnel; and (4) cramming by machine. Without exception the food is always prepared from finely-ground meal, hard corn never being employed. Buckwheat-meal, maize-meal, and barley-meal are employed, but we have not met with or heard of an instance where ground oats, the staple food in Sussex, is used. With one or other of these is mixed skim milk, but in several districts of France the "whey" of curdled milk is preferred, and in the Bresse country the latter is thought to give greater perfection in fattening and improve the quality of the flesh. Some of the fatteners are content to mix hot water with the meal, but all acknowledge that milk or whey is better. In one case we found that boiled potatoes are mixed with the food, and from the nature of that tuber its addition must be of great service. In some parts of France fat is added to the mixture, and in others not. It is customary when the older birds are to be fattened to divide them in accordance with their sex and kind.

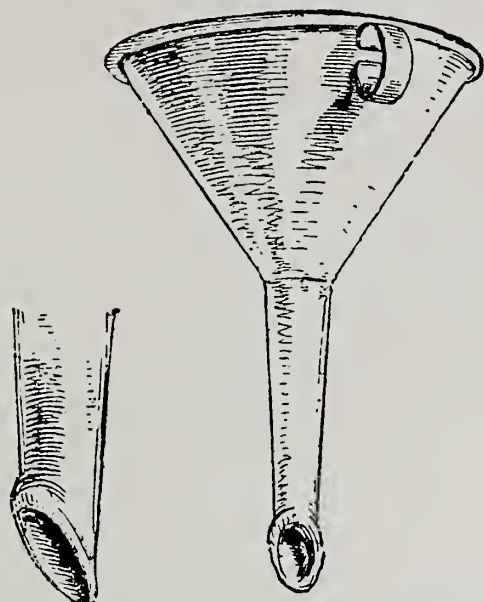
Capons, cockerels, and pullets are placed into respective pens, as there is less danger of interference one with the other when this is done. Sometimes a fourth class is made—namely, whether the pullets have laid or not. In the case of ordinary cockerels or pullets, three weeks is sufficient time for fattening; but if capons or poulardes, they may be kept in the cages a couple of months.

First: Feeding upon flesh-forming foods under ordinary conditions.—This plan can never produce the best qualities of table-poultry, as there is so much loss by exercise, and the birds are not under those conditions to induce rapid flesh formation. As a rule, this system is only adopted by those who sell to dealers, whose business it is to finish the birds off.

Second: Cramming by boluses of food, or *patons*.—This is practically the same method as adopted



by the ancient Egyptians more than four thousand years ago, and it is probably the most general to-



THE KIND OF FUNNEL USED FOR CRAMMING.

[Copyright.]

day. The food is made into a paste with sufficient consistency for it to hold together. There are two ways in which feeding takes place. In the one, a sufficient number of the *patons*, or boluses, each about the size of a little finger, are prepared, and the operator takes hold of the bird's head, either in the pen or out of it—in the latter case firmly gripping it between his body and left arm—opens the mouth with the thumb of his left hand, dips the *paton* into a vessel of whey or milk, inserts it into the mouth, presses it down the throat with his finger, and then carries the food into the crop by running his finger and thumb down the outside of the neck. The process is repeated until the crop is full. The second plan varies somewhat. The operator sits upon a stool, with a lot of the paste and a bowl of milk or whey before him. The bird is placed upon his knees, his legs being held by them, the left hand holds the wings, and he places a small quantity, after dipping it in the liquid, into its mouth, allowing it to swallow in the usual manner, there being no actual cramming. In some instances, a combination of these two methods is adopted. The birds are kept in cages, to which are fitted troughs. After each meal the attendant goes round, feels the crop of each fowl, and then crams a few of the *patons* whenever doing so is thought desirable.

Third: Cramming by a funnel.—In this case the food is made into liquid form, about the consistency of ordinary cream. A specially-made funnel, as shown in the accompanying illustration, the nozzle of which is carefully turned to prevent injury to the bird's throat, is inserted into the throat until the orifice enters the crop, and the food is ladled therein until the crop is full, when the funnel is withdrawn. The quality of flesh produced in this manner is splendid, and we are glad to say that these funnels can be purchased at a reasonable price in this country, as they are simple in use and effective.

Fourth: Cramming by machine.—Several machines are made in France similar to those in use in this country, and their use is increasing; but it is unnecessary to refer to them in detail.

Another method of feeding by liquid food is very primitive indeed—namely, by the mouth, as shown in the accompanying illustration. The operator fills his mouth with the food, and inserting the open beak of the bird between the lips, forces the mixture down the throat by pressure of his breath. Such a system is not very widely adopted, and was more common formerly than is the case now. The results are said to be excellent, but this method is not one that we can recommend.

(The above notes are extracted from "Poultry Fattening," by Edward Brown, F.L.S., the new edition of which, largely re-written and brought up to date, has recently been published. Price 1s. 2d., post free, from this office.)



CRAMMING BY MOUTH.

[Copyright.]



## SOME RECENT EXPERIMENTS.

### AUTUMN CHICKEN REARING.

The objects of this experiment were to find the cost of rearing autumn-hatched chickens to a killing age, and to note the rate of increase in weight week by week for food consumed. The cost of spring rearing is to be determined in the spring of 1911 in order to compare it with autumn rearing. Thirty-one eggs were put in the incubator on September 30, of which twenty-one were fertile and seventeen hatched. One chick was accidentally killed. The trial extended over eighteen weeks. For the first fortnight the chicks were fed on a dry mixture containing no meat, which cost 12s. per cwt. From the second to the sixth week they were fed on a mixture containing meat at a cost of 24s. per cwt. From the sixth to the sixteenth week they received the same mixture as at first at a cost of 12s. per cwt. During the last two weeks of this time they were given a midday soft feed of two parts fine oatmeal and three parts wheat meal mixed with separated milk. For the last two weeks of the trial the soft food was given twice a day, and consisted of two parts fine oatmeal, three parts wheat meal, and two parts maize meal mixed with separated milk, while the evening feed was changed to whole barley.

At the end of the eighteen weeks the average weight of the chickens was 3lb. 12½oz., and the food consumed by each was 14lb. 9oz. The cost and returns worked out as follows:

	s.	d.
Cost of thirty-one eggs ...	5	2
Cost of oil for incubator and brooder	1	1
Cost of grain and meal ...	25	5½
Total cost of rearing sixteen chickens	31	8½
Average cost per chicken ...	2	0
Market value per chicken ...	3	0

—*Field Experiments in Staffs and Salop and at Harper Adams Agricultural College, Joint Report, 1910.*

### VALUE OF POULTRY MANURE.

Poultry manure is generally considered to be particularly valuable, and analyses quoted in this report show it to be considerably richer than that of other live stock, especially in nitrogen and phosphates. In order to test the point in practice, experiments have been made by the Cornwall C.C. since 1904 with fowl manure in comparison with other nitrogenous manures. A series of quarter-acre plots were laid out on a second-rate pasture on a medium loam soil, and the manures were applied each year in the spring. One plot received 4 cwt. of superphosphate and 4 cwt. of poultry manure, and the others the same quantity of superphosphate, with respectively nitrate of soda, sulphate of ammonia, dried blood, fish guano, and Peruvian guano, the quantity of each applied containing the same amount of nitrogen as 1 cwt. of nitrate of soda. Taking the average of the six years, the weight of hay produced on the unmanured plot was 9cwt. per acre, with superphosphate alone 15½cwt. per acre, and with superphosphate and each of the other manures, including poultry manure, about 30cwt. per acre. The average cost of the nitrogenous manures was about 10s. per acre, and

the increase produced by them 15cwt. per acre. The increase due to poultry manure was 14¼cwt., so that 4cwt. of poultry manure is estimated to be of almost as much value as 10s. worth of the other five manures. Experiments on different crops and soils are necessary before an authoritative statement can be made as to the value of the manure, but this work has been carried far enough to show that poultry-keepers should take every precaution to guard against waste. Compared with the purchased nitrogenous fertilisers employed, poultry manure appeared to be worth rather over £2 5s. per ton.—*Cornwall C.C., Poultry-Keeping for Profit, by W. Hawk.*

### LAYING TEST WITH DIFFERENT BREEDS OF POULTRY.

In this trial the merits as layers of Buff Orpingtons, Plymouth Rocks, and Partridge Wyandottes were compared. The birds were all hatched in the spring of 1908, and in October ten pullets of the Buff Orpington and Plymouth Rock breeds and nine of the Partridge Wyandotte were put into pens. The Plymouth Rock pen started laying late in December, and then only produced five eggs in that month, but the other two pens started at the beginning of the month. The records were kept until March 18, and the number of eggs laid by each pen in each month and during the whole period are shown in the following table:

	Dec.	Jan.	Feb.	March 1st to 18th.	Total.
Plymouth Rock ...	5	46	110	76	237
Buff Orpington ...	86	123	127	85	421
Partridge Wyandotte	105	172	138	93	508

The average weight of the eggs of each breed was: Plymouth Rock, 2.18oz.; Buff Orpington, 1.91oz.; Partridge Wyandotte, 1.87oz.

The pen of Partridge Wyandottes contained only nine birds, while the other two pens contained ten each. Taking this into consideration, it will be seen that in this trial the Partridge Wyandottes were the most satisfactory as winter layers.—*University College of Wales, Aberystwyth, Agricultural Department, Bulletin 1.*

### Canned Eggs.

A growing trade is being done in liquid or canned eggs, in the preservation of which some chemical is used, which may be deleterious, as preservatives usually are, or the eggs are frozen. Doubtless large quantities of bad eggs are palmed off in that way. The difficulty is to get hold of the goods. A decision in the Supreme Court of the United States declares that food can be condemned anywhere provided it is in the original packages, so that one law applies to the entire territory. Under this decision each State must consume its own rotten eggs.

### No Laying Competitions in Holland.

A Dutch correspondent of the *Canadian Poultry Review* says that six years ago a provincial co-operative association held a laying test, but finding that breeding from their "top layers" did not increase, but rather decreased, the productiveness of their progeny, they gave it up. Whilst the tendency is to exaggerate these competitions, it would seem that Dutch breeders have gone to the other extreme.



## HOT CHICKEN ENTRÉES.

## CHICKEN À LA CHIPOLATA.

Cut half a pound of prime streaky bacon or ham into strips or dice and fry them lightly; then drain well and place in a stewpan with a dozen shallots, some button mushrooms, a large carrot cut in slices, and each slice cut in quarters, and a dozen chestnuts, all these items having been previously cooked. Add the flesh of a plump chicken which has been cut up into small neat slices and cover with good stock or gravy; add a seasoning of salt and pepper and a bunch of savoury herbs, and cook gently from twenty to thirty minutes. When done enough take up the chicken and arrange neatly on a bed of smoothly mashed and pleasantly seasoned potatoes which has been placed in readiness on a hot dish; form the other items into a border round about, and, after the gravy has been sufficiently thickened and reboiled, pour it carefully over the chicken and serve.

## CHICKEN À LA POULETTE.

Put two ounces of fresh butter into a stewpan and dissolve it without allowing it to brown, then add a seasoning of salt and white pepper, an ounce of fine flour, and half a pint of milk or white stock, and stir briskly with a small wooden spoon until boiling-point has been reached. Continue stirring for three or four minutes, then add about half a pound of cooked chicken cut up neatly, an onion stuck with three or four cloves, and a bunch of savoury herbs, and simmer gently until the chicken is thoroughly hot. Have ready on a hot dish a neatly-shaped, firm potato border which has been prettily marked and daintily browned, and dish up the chicken in the centre; thicken the liquor remaining in the stewpan to a smooth, creamy consistency with two or three beaten egg-yolks, and add more seasoning if required. Stir over a gentle heat until thoroughly hot. When ready pour the sauce over the chicken, but not over the potato border, garnish round about with dainty little rolls of carefully-fried bacon interspersed with sprigs of parsley, and serve.

## BAKED CHICKEN.

Cut the fowl into small joints and put these to soak for ten minutes in cold milk and water; then dry them with a clean, soft cloth and rub them over with flour which has been mixed with a little salt, pepper, and mace. Place a few slices of rather fat bacon at the bottom of a deep pie-dish, and upon these arrange the chicken, then pour over half a pint of good stock and fill up the dish with rice which has been boiled in milk until quite tender, and then thoroughly drained. Cover the rice with a sheet of thick, well-buttered paper and bake in a moderate oven for about an hour. When done enough remove the paper and sprinkle the rice with a mixture of finely-chopped parsley and sifted egg-yolk; place the pie-dish on a good-sized flat dish covered with a dish-paper or a neatly-folded napkin, garnish freely with sprigs of fresh parsley, and serve very hot. A little richly-flavoured gravy, or a well-made suitable sauce, is generally considered an improvement to baked chicken; but this is a point for individual taste and convenience to decide. *Note:* If preferred some well-mashed, pleasantly seasoned potatoes may

be used instead of rice, in which case the surface should be prettily marked with a fork or a small spoon, and be coloured a rich, golden brown.

## CURRIED CHICKEN.

Choose a plump bird, and after preparing it in the usual way cut it up neatly and fry for a few minutes in boiling, clarified fat; then drain the pieces carefully and place them in a stewpan with a tablespoonful of finely-minced onion, a dozen button mushrooms, a tablespoonful of finely-chopped celery, and sufficient pleasantly flavoured white stock to cover the whole. Simmer gently for half an hour, then add a tablespoonful of curry paste and a dessertspoonful of ground rice mixed smoothly with a little cold water, and simmer a few minutes longer. When done enough arrange the chicken in a pile on a well-heated dish, thicken and enrich the sauce by adding a teacupful of good cream; then bring it to boiling-point and pour it carefully over the chicken. Have ready some rice prepared as below, and form it into a neatly-shaped, firm border round about, then garnish tastefully with sprigs of parsley, and serve at once.

## RICE BORDER.

Wash the requisite quantity of Carolina rice in several waters to ensure its being perfectly clean, and boil it in a generous supply of cold, slightly-salted water. Let the water come slowly to the boil, then leave the pan lid off and allow the rice to boil gently for about half an hour. Do not stir the rice while it is cooking, as that is apt to bruise the grains, but just shake the pan every now and then to prevent its sticking to the bottom. When done enough, drain the rice in a strainer or colander and place it before the fire for a short time to dry, when it is ready for use. It may be seasoned or not, according to taste.

## CHICKEN FRITTERS.

Cut the remains of a couple of fowls into small neat pieces, as even in size and thickness as possible, and season these well with salt, pepper, mace, and lemon-juice, and set them in a cool place until required. Put four ounces of fine flour into a basin and mix with it a small teaspoonful of salt, then add gradually a gill of lukewarm water and two tablespoonfuls of pure salad oil; stir well together and allow the batter to stand for an hour or two before using; then just at the last minute stir in, very lightly, the whites of two fresh eggs whisked to a firm froth. Dip the pieces of chicken, one at a time, into the batter, then fry carefully in a good supply of boiling clarified fat until coloured a lovely light brown, after which drain away every particle of grease so as to leave the fritters quite dry and crisp, and pile them up neatly on a hot dish covered with a dish-paper. Garnish with hot, skillfully fried parsley, and serve as quickly as possible.

## The National Bird of Ireland.

The *Glasgow Evening Times* says: "One need not be surprised if, with that happy blend of the poetical and practical which is characteristic of the Irishman, the first Parliament on St. Stephen's Green unanimously agrees to adopt the domestic hen as the national bird."



## SUSSEX GROUND OATS.

IT is surprising that a food which is extensively used around the great chicken fattening centres of South-Eastern England should be but a name to so many poultry-keepers in other parts, even if it is not quite unknown, or confused with "oatmeal." A few words on the genuine "Sussex ground oats" may therefore prove of interest to some readers.

It may be said at the outset that the great distinction between this food and oatmeal lies in the fact that the latter is the kernel only of the oat, ground into meal; whereas the former consists of the whole oat, husk and all, ground into a fine, smooth powder between specially dressed stones, "set very low," in millers' parlance—*i.e.*, close together. Inferior grades generally contain considerable admixtures, more or less, of other meals, and may be bought fairly cheaply. But even the "pure" Sussex ground oats of the best quality, costing about £10 per ton, contain a little barley meal, not for purposes of adulteration, but simply because the great dryness of the barley assists the perfect grinding of the oats. The usual proportion is one sack of the former to eight of the latter. The oats principally employed are carefully selected Russian oats, which are naturally drier than those grown in Britain, and are therefore more suitable for very fine grinding.

Many millers in Sussex and Kent make a speciality of grinding these oats, and employ men entirely for this work. Considerable skill is required to properly "dress" the stones for the purpose, and the art is often handed down from father to son. It is costly also, as one pair of stones take two days to finish, and they will only grind thirty to forty sacks of oats without redressing. The actual operation of grinding is, perforce, very slow, the output being only about four bushels per hour, and 10-12-h.p. is required to drive a single pair of stones.

Those who wish to produce the finest fatted table-poultry find that it undoubtedly pays to use the genuine Sussex ground oats, even if they have to pay the carriage from Sussex or Kent, which would average, roughly, 2s. per cwt., and less for a larger quantity. It does not pay, however, to purchase inferior ground oats from these counties, as they are either poor in quality or contain an admixture of other meals, on which carriage will then have to be paid—obviously a useless waste of money. It is better, if a mixture be required (and for a second-class trade this is more profitable than using the pure article), to purchase a smaller quantity of the pure Sussex ground oats and then to mix with this what other meals may be desired.

A very useful mixture for fattening poultry would be one consisting of half ground oats and half barley meal; a cheaper, but inferior, one is: one part ground oats, one part barley meal, one part maize meal.

Pure Sussex ground oats can always be recognised by their appearance, taste, and smell; also by handling them. In appearance they are somewhat similar to barley meal, but in the best qualities the meal is of one fineness throughout, without any of the little bits of husk characteristic of barley meal. The taste is an almost infallible guide, and should closely resemble that of oatmeal, a

clean, "nutty" flavour; the smell is also like that of oatmeal. When handled, Sussex ground oats have a distinctive "silky" feeling, and if a small quantity be crushed up in the hand it adheres together slightly.

Sussex ground oats, besides producing the finest quality flesh on fattening fowls, are also a splendid food for rearing chickens on, as the finely-ground husks can be assimilated, and help to build up a strong and well-developed frame; while the kernel of the oat is, of course, one of the most nourishing of foods, and, containing a high percentage of albuminoids, is particularly suitable for growing stock of all classes.

## A YEAR WITH A SMALL-HOLDING.

AN agricultural labourer, W. L., succeeded in obtaining from a landowner in Surrey a small-holding of one acre, in the autumn of 1909. He has sent the following report on the results for the year 1910. He began the year with fifty head of fowls and ended with fifty-six. His fowls laid 1,822 eggs.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
Fowls and eggs sold	-	14 12 5½	Food for live stock	-	16 0 3
Three pigs killed	-	-	Three pigs cost	3	3 0
82 stone, at 4s.	16	8 0	Rent	-	1 5 0
Potatoes, 2 ton, at £4	-	8 0 0	Tenant's valuation	1	0 0
Swedes, &c.	-	0 14 0	Labour	-	4 6 0
				£25	14 3
			Profit	-	14 0 2½
	£39	14 5½		£39	14 5½

Of this profit he laid out £8 1s. 2d. in fowl-houses, wire-netting, and other permanent fixtures. Whenever he put in a full day's labour he charged it up, so that part of the charge for labour was paid to himself. On the other hand, he has taken credit for bacon, potatoes, &c., consumed. He borrowed some of the capital required from the Land Club Credit Bank, and has repaid it in full. The net result is some 5s. a week added to his income, and in addition, as he says, better fare at home.—*Our Land*.

## Hen versus Cow.

The Report of the Scottish Agricultural Commission to Australia, recently published, states: "A challenge was issued last year that twenty-five Tasmanian-bred pullets would compete against any dairy cow in the State, to show which would return the most net profit in twelve months. All food was to be charged against the pullets, even including grit and green food. Likewise all food was to be charged against the cow, but there was no restriction as to feeding provided all food was charged for. The current price obtainable for new-laid eggs each week was to be credited to the pullets, and the milk could be sold either to a butter or cheese factory. The challenge was for £25 a-side, and though brought under public notice several times it was never taken up."



## A WELL-DESERVED HONOUR.

JUST as we go to press we learn with the greatest possible pleasure that Professor Patrick Wright, until a few weeks ago Principal of the Glasgow and West of Scotland Agricultural College, and now Agricultural Adviser to the Scottish Education Department, has been created a Knight. We heartily congratulate Professor Wright on this well-deserved honour. A further reference to Professor Wright's appointment and to his excellent work appears on page 428 of the present issue.

## FOREIGN NOTES.

### New Jersey Developments.

There are many large poultry plants in the State of New Jersey, where production has grown greatly of late years, but educational and experimental work has been in reverse ratio. A Bill has just been presented to the Legislature asking for £5,000 for equipment of a Poultry Department at the State Experiment Station and £600 annually for maintenance. An estimate has been made that £2,000,000 is invested in poultry farms in New Jersey, and that the annual value of the eggs and poultry produced is £1,600,000.

### Incubation by Electricity.

An experiment has been conducted at Hawkesbury College (Vic.) to test the respective virtues of electricity and oil lamps for hatching, the results of which are very interesting. The report states that in the electric machine the chicks left the shell in one-third to one-half the time occupied in the lamp incubator; and that in the first-named all hatched easily and cleanly. From the figures published it would appear that loss of weight was rather greater by electricity than with the lamp. That is a very important factor, as artificially-incubated eggs lose weight by evaporation much more rapidly than if under hens. If electricity increases this loss, then the risks are greater. The experiment is to be repeated.

### Indian Poultry Club.

At the last Allahabad Poultry Exhibition a meeting was held under the presidency of Mr. Burt, Deputy Director of Agriculture for the Province, at which the following resolutions were passed:

- (a) That in the opinion of this meeting, it is desirable that a Poultry Club for all India be formed on the lines of the National Poultry Club and affiliated to it.
- (b) That a notice of this meeting be sent to the principal newspapers together with a short explanatory note setting out briefly the objects of an Indian Poultry Club and inviting all interested to become members.
- (c) That Mr. Botting, of Lucknow, be asked to act as secretary, *pro tem.*, for the purpose of securing members.

### A Promise for Cape Colony.

A deputation from the Cape Town and Western Province Poultry, Pigeon, and Cage Bird Society waited on the Prime Minister (General Botha) recently for the purpose of urging the necessity of a

poultry expert being appointed, and the need of co-operation in the egg industry. There were present: Messrs. J. W. Jagger, M.L.A. (president of the Society), F. Lincoln Leak (chairman), Dunn, Hudson, Lawrence, Boag, Nicholson, Pilkington, Stevens, and Whiting (hon. secretary). Mr. Jagger introduced the deputation, which was sympathetically received by the Premier. The contention was that poultry-farming needed fostering on an intelligent basis, and that the farmers needed encouragement by getting a better price for eggs, which could only be the case if the eggs were sent, as in Denmark, properly graded to market. Improvement in grading and distribution would redound to the benefit of both customer and producer. General Botha stated that a poultry expert would be appointed almost immediately, and that the co-operative principle would be adopted as soon as the Land Banks were established, provision for them now being on the Estimates.

### A Big Hatchery.

Mr. Leon L. Haigh, of Canisteo, N.Y., has just completed the erection of a huge hatching-plant, built of concrete. The building is 92 feet long and 35 feet wide, and the two floors contain over 6,000 square feet of floor space. It is intended to accommodate 100 incubators with a hatching capacity of 200,000 chickens per season. The main object is to supply day-old chicks, which trade is growing by leaps and bounds in the States.

## MARKETS & MARKETING.

### WEEKLY REPORTS

#### Week Ending May 27.

The supply of chickens was fairly plentiful, but a large proportion of the birds was very small indeed, many of them weighing no more than 2lb. Of course, the producer is quite right to dispose of his birds as soon as he can, but this must not be overdone. Goslings and ducklings were also tolerably plentiful. New-laid eggs were present in fairly large numbers.

#### Week Ending June 3.

Trade in poultry was slack during the week, the demand being very poor indeed. Complaints among the dealers were very common regarding the low value of poultry produce of all kinds. Goslings were rather more plentiful, but buyers were few. New-laid eggs were very abundant.

#### Week Ending June 10.

The demand for chickens improved very considerably, and good chickens found a ready sale. The price of ducklings was somewhat lower, supplies being very plentiful indeed. There was little change in the egg trade.

#### Week Ending June 17.

There was little change to note from the previous week. Chickens sold fairly well, and the demand was good. Ducklings were pretty plentiful, and some excellent birds were on view; prices were not very high, however. New-laid eggs were dearer, and made a good price.



# TABLE OF PRICES REALISED FOR HOME, COLONIAL, AND FOREIGN POULTRY, GAME, AND EGGS DURING THE FOUR WEEKS ENDING JUNE 17, 1911.

## ENGLISH POULTRY—LONDON MARKETS.

DESCRIPTION.	PRICES REALISED DURING THE MONTH.			
	1st Week.	2nd Week.	3rd Week.	4th Week.
Surrey Chickens .....	3/6 to 5/6	3/6 to 5/6	3/6 to 5/6	3/6 to 5/6
Sussex " .....	3/6 " 5/6	3/6 " 5/6	3/6 " 5/6	3/6 " 5/6
Yorkshire " .....	2/0 " 4/0	2/0 " 4/0	2/0 " 4/0	2/0 " 4/0
Boston " .....	2/0 " 4/0	2/0 " 4/0	2/0 " 4/0	2/0 " 4/0
Essex " .....	2/0 " 4/0	2/0 " 4/0	2/0 " 4/0	2/0 " 4/0
Capons .....	5/0 " 7/0	5/0 " 6/6	5/0 " 6/6	5/0 " 6/6
Irish Chickens .....	2/6 " 3/6	2/6 " 3/6	2/6 " 3/6	2/6 " 3/6
Live Hens .....	2/0 " 2/6	2/0 " 2/6	2/0 " 2/6	2/0 " 2/6
Aylesbury Ducklings..	3/0 " 4/6	3/0 " 4/0	2/3 " 3/9	2/0 " 3/6
Ducks .....	2/3 " 3/0	2/3 " 3/0	2/0 " 2/6	2/0 " 2/6
Goslings .....	5/0 " 7/6	4/6 " 6/6	4/6 " 6/6	5/0 " 6/0
Poussins .....	1/4 " 1/8	1/4 " 1/8	1/4 " 1/8	1/3 " 1/8
Guinea Fowls .....	2/6 " 3/6	2/6 " 3/6	2/6 " 3/6	2/6 " 3/6

## ENGLISH GAME—LONDON MARKETS.

DESCRIPTION.	PRICES REALISED DURING THE MONTH.			
	1st Week.	2nd Week.	3rd Week.	4th Week.
Grouse .....	—	—	—	—
Partridges .....	—	—	—	—
Pheasants .....	—	—	—	—
Black Game .....	—	—	—	—
Hares .....	—	—	—	—
Rabbits, Tame .....	1/3 to 2/6	1/3 to 2/6	1/0 to 2/3	1/0 to 2/6
" Wild .....	—	—	—	—
Pigeons, Tame .....	—	—	—	—
" Wild .....	—	—	—	—
Woodcock .....	—	—	—	—
Snipe .....	—	—	—	—
Hazel Hens .....	0/10, 1/0	0/10, 1/0	0/11, 1/0	0/11, 1/0

## ENGLISH EGGS.

MARKETS.	PRICES REALISED DURING THE MONTH.			
	Per 120.	Per 120.	Per 120.	Per 120.
LONDON .....	7/9 to 8/6	7/0 to 8/0	7/6 to 8/6	8/0 to 9/6
Provinces .....	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.
MANCHESTER ...	0/9	0/9½	0/9	—
BRISTOL .....	0/10	0/10	0/10	—

## FOREIGN POULTRY—LONDON MARKETS.

COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.			
	Chickens. Each.	Ducks. Each.	Ducklings. Each.	Geese. Per lb.
Russia .....	1/3 to 2/9	2/0 to 2/9	—	—
Belgium .....	—	—	—	—
France .....	—	—	—	—
United States of America .....	—	—	—	—
Austria .....	—	—	—	—
Canada .....	—	—	—	—
Australia .....	—	—	—	—

## IMPORTS OF POULTRY AND GAME. MONTH ENDING MAY 31, 1911.

COUNTRIES OF ORIGIN.	DECLARED VALUES.	
	Game.	Poultry.
Russia .....	£754	£10,055
Belgium .....	—	—
France .....	—	£2,897
United States of America .....	—	£33,557
Other Countries .....	£3,921	£46,226
Totals .....	£4,675	£93,335

## IRISH EGGS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
Irish Eggs	7/6 to 8/9	7/6 to 8/9	7/9 to 9/0	7/9 to 8/6

## FOREIGN EGGS.

COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.			
	1st Week.	2nd Week.	3rd Week.	4th Week.
Russia .....	7/6 to 9/0	7/6 to 9/0	7/9 to 9/0	7/6 to 8/6
Denmark .....	8/0 " 9/0	8/0 " 9/0	8/3 " 9/6	8/0 " 9/6
Germany .....	7/9 " 8/9	8/0 " 9/0	8/3 " 9/3	8/0 " 9/3
Netherlands .....	6/0 " 7/3	6/0 " 7/3	6/0 " 6/9	6/6 " 7/6
France .....	5/6 " 6/6	5/6 " 6/6	5/6 " 6/9	6/0 " 6/6
Italy .....	—	—	—	—
Austria-Hungary .....	—	—	—	—
Other Countries .....	—	—	—	—
Totals .....	—	—	—	—

## IMPORTS OF EGGS. MONTH ENDING MAY 31, 1911.

COUNTRIES OF ORIGIN.	DECLARED VALUES.	
	Quantities in Gt. Hund.	Declared Values.
Russia .....	1,107,846	£370,098
Denmark .....	330,894	£137,734
Germany .....	37,015	£13,350
Netherlands .....	76,994	£33,548
France .....	94,574	£38,594
Italy .....	45,567	£17,258
Austria-Hungary .....	34,846	£13,117
Other Countries .....	51,438	£18,307
Totals .....	1,779,174	£642,006



## REVIEWS.

A FEW ACRES WITH A COTTAGE. By F. E. Green.  
London: Andrew Melrose. Price 3s. 6d.

IN this little book, which, after all, is not little, since it runs to well over two hundred pages. Mr. F. E. Green gives an account of one year of his life as a small-holder. Mr. Green at the outset explains the difficulties which he, a city-bred man, experienced for eight years in his search for a suitable spot in which to satisfy his "earth hunger." "Most of the picturesque cottages were farm-tied," he says, "many were insanitary, and all, without exception, had but a strip of earth for a garden, which, as often as not, was a slice of the roadside waste. It seemed impossible to find a few acres unencumbered with a large house and a large rent. I wanted to rent, not to buy, a few acres with a cottage where I could win a bare living from the soil, giving up my whole time to the work, without having to fall back upon any other occupation." Eventually he succeeded in buying four acres of "rank Essex clay" close to the shores of the Blackwater. "From the point of view of immediate material success, the experiment was a failure, but I came to regard it as an illuminating failure, for the hundred pounds I spent on it was the premium paid to teach me much that was vital to me afterwards. My beans were blighted, my potatoes diseased, my apple trees ruined by rabbits, and the wheelbarrow I had specially built of oak was so large and heavy that it had to be turned upside down and regretfully converted into a duck-house. The duck pond, which a friend and I spent a fortnight in digging out, was dug in vain, for not a solitary duck would swim in so clean a bath when there was another pond in an adjacent field, redolent of green slime and thick with succulent weeds." Eventually he succeeded in obtaining sixteen acres, and later increased this to twenty acres. Three acres of this he dug with fork and planted with over seven hundred half standard and bush apple trees and standard plum and apple trees. "In between these rows of trees are about two thousand gooseberry and currant bushes, mostly gooseberries, and again between these are rows of strawberry plants covering in the aggregate about half an acre of land." He has also a ten-acre meadow, a three-cornered paddock with pigsty, and apiary of thirty hives, a stock-yard with a cowshed for four cows, a lean-to for wintering heifers, and two calf-sheds. All these sheds were erected by Mr. Green himself with the help of his assistant, "John." In addition, he has a dairy, a carpenter's shed, a bicycle and tool shed, and in the meadow two poultry-houses on wheels, in which "there are about thirty Orpington pullets, for I only keep that number of hens, so that they can do no injury to the pasture when run at liberty. I like my hens to live as my bees, rent free." The first chapter of the book, from which the above quotations are taken, deals with the "Homestead," and the remaining twelve chapters, each named after the month with which it deals, are very interesting and useful. In that dealing with March, Mr. Green gives much valuable information gathered from his experience with White Orpingtons, and there is also an excellent illustration of one of the poultry-houses.

The whole book is extremely interesting, and it is written in a pleasant, humorous style that makes the reading of it a pleasure, even to those who are not interested in life on a small-holding. In addition to the frontispiece there are twenty-one illustrations, and the whole book is well got up and excellently printed.

HOW TO MAKE AND PROVE A WILL. By Albert E. Hogan, LL.D., B.A. Macdonald and Evans, 1s. 6d. net.

THIS little volume, which sets out to give to the general reader practical and straightforward directions for the making and proving of wills, is a model of clear exposition and relevancy to its subject, all the more noteworthy since the subject-matter has had to be disintegrated from the great mass of English civil law. A treatise of this sort must be presented in simplified language, free from legal technicalities, if it is to be understood by the average man. This feat Mr. Hogan has achieved in admirable fashion, even if one gathers, from his illustrations and explanations of the pitfalls attending "how to make a will," that Mr. Punch's advice—"Don't"—is probably the cheapest as well as the safest and wisest to follow: thus leading to a prudent decision to take the advice and assistance of a solicitor, who is, after all, trained in expert knowledge of what is "regarded in legal circles as one of the most difficult documents which a solicitor can be asked to draw." Mr. Hogan clearly points out the disastrous consequences that may follow on either the total omission to make a will or the drafting of it in such a way that the testator's real intentions are entirely nullified, and perhaps grievous hardship entailed thereby on those whom he leaves behind, and had intended to benefit.

## ANSWERS TO CORRESPONDENTS.

### The Training of Poultrymen.

In your Editorial Notes of your issue of the ILLUSTRATED POULTRY RECORD for May, under the heading of "The Training of Poultrymen," you say you have several inquiries for poultrymen capable of handling practically substantial flocks of fowls kept for market purposes. I suppose this means the fattening of fowls, such as cramming, &c., of which I have only the theoretical side of the business. Kindly let me know whether you have call for men that are kept solely for egg-production. If so, I will send you further particulars. Wishing your paper every success, which I have taken from the first up to now.—F. G. (Spa Hole, Yorkshire.)

The class of man referred to in our editorial pages has been both for those capable of undertaking the responsibility of fattening establishments and of egg farms on a large scale, and these are not at all easy to secure. Many of those best qualified have businesses of their own and prefer to work for themselves. In nearly every instance they have built up from small things. That explains why the supply of trained men is so limited. There is no branch in which a man of small capital, provided he has brains, perseverance, enterprise and energy, can attain success as in poultry. Frequently the man who fails for himself fails for other



people. It is a totally different proposition taking hold of a big concern, handling thousands of birds, to managing a few hundreds. In process of time we shall doubtless evolve a highly-trained, expert race of managers, combining knowledge with activity, but the time does not yet appear to be reached. Thanks for your good wishes.

### German Eggs.

I note that you have made some investigations into the trade in Germany. Can you explain the reason why, though Germany is such a large importer of eggs, she exports eggs to New Zealand? We, in this country, are endeavouring to put the industry on a proper commercial footing, and certainly do not smile on those German eggs. These eggs come in liquid form, I believe, and so can only be used for certain purposes.—T. H. R. (Masterton, New Zealand.)

Without further knowledge as to the liquid egg imported into New Zealand from Germany it is impossible to say whether they are the product of that country or not. But it is more than probable these are merely transhipped there. There are several German firms engaged in this trade, whose places of business are in Russia and South-Eastern Europe, and they are doubtless the shippers, or they may import the eggs whole and prepare them in Germany. A considerable quantity is, however, shipped in liquid form from Russia.

### Scaly Leg.

Will you please give me a good cure for scaly leg?—M. R. T. (Rochdale.)

This is sometimes caused by fowls being kept upon dry soil, or on a run which is laid down in ashes, but more frequently it is due to the presence of parasites on the legs. If due to the first cause the birds should be removed to a grass run, the legs well soaked in warm water, and all loose scales taken off; when the legs are thoroughly dry, apply vaseline and zinc ointment. If the trouble is due to parasites, sulphur ointment may be applied. When the parasites are killed the legs will assume their natural appearance.

### Breeds for Clay Soil.

I live on a heavy clay soil, and find that Dorkings do not answer well. Will you please tell me what are the best pure breeds for such conditions?—H. T. (Filey.)

From the fact that you attempt to rear Dorkings we take it that table qualities are your chief aim, and for this purpose on a heavy clay soil Dorkings are quite unsuitable; in fact, under such conditions, the best class of table-chickens should not be kept. A light sandy soil is essential to rapid growth. We would recommend a general purpose breed, such as Plymouth Rocks, Buff Orpingtons, or Wyandottes.

### Guinea Fowls.

Can you tell me anything about Guinea fowls? I live on a farm of 300 acres, and have been advised to take them up, and I am told they are very profitable. Is this so, and are they very difficult to keep?—W. E. (Great Marlow.)

These birds may be profitably reared, provided that they receive proper care and attention. The young ones are somewhat delicate, and cannot withstand damp to any extent, but when they get beyond the very early stages they can be depended upon to look after themselves, and be fed in the same way as other fowls on the farm. The demand for Guinea fowls for table pur-

poses is limited, and the season is a very short one. The hens commence to lay about April, and will probably lay sixty to seventy eggs up to the end of August. The eggs are rather small but very rich in colour, and are considered quite a delicacy, and in certain fashionable districts command a good price. The greatest difficulty experienced in rearing Guinea fowls is their roving habits and propensity for laying away. They may, however, be brought under a better state of domestication by being kept with the other members of the poultry-yard.

### Dairy and Poultry Farming.

I am thinking of taking a farm in the South, keeping cows of a high milking capacity only (selling milk or butter), and rearing heifer calves. The fowls would be kept entirely for egg-production, rearing enough chickens to replace old stock. Do you think the combination a good one? Any advice will be gratefully received. I had an early experience of farming, but have been out of it lately. I have a living income, but want to increase it.—G. B. (Arkwright Street.)

As you have had an early training, it does not appear that you will run much risk in adopting the course you suggest, particularly as you have a sufficient income to keep you going until you recover your latent knowledge and begin to receive some profit on your enterprise. If you are looking for a sufficient return on outlay, I should not advise you to take a farm of less than fifty acres, for which in the district you name you will have to pay a rent of about from 20s. to 30s. per acre. You will, of course, look for a place suitably placed with regard to railway facilities or nearness to a town. Do not over-stock on any account; indeed, it is wise to go to the opposite extreme and increase when you find out the character of the holding.

### Feeding Turkey Chickens.

Will you please tell me what are the best foods for turkeys until they are three months old?—F. G. R. (Dumfries.)

The food for the first five or six days may consist of hard-boiled eggs, finely chopped, mixed with biscuit-meal or bread-crumbs moistened with milk. The egg food should be left off gradually, giving in its place a cooked food mixed with rice boiled in milk. When about a fortnight old, a little dari, groats, or buckwheat should be thrown down, and, most important of all, young onions finely chopped. All kinds of tender green food are useful, but meat minced with the soft food for the first three months is absolutely necessary. With this one exception, the same foods as used for the other poultry may be given to the young turkeys. The dry method is unsuitable for turkeys.

### Various.

May I have the following questions answered through your valuable paper's next issue? 1. I have a Houdan cock (1908), three Minorca hens (1909) three Minorca pullets (1910 early). If I mate these on January 1, how soon can I expect fertile eggs? Can I by resting the cock during June use him for another month with the same birds? 2. What is a "dus-bath," which I often see referred to? 3. How does the Red Sussex compare with the Buff Orpington as a general purpose breed, on gravelly soil, high, and sloping to face south?—B. L. H. (Burghfield).

1. Fertile eggs may be expected seven or eight days after the male bird has been put with the hens. 2. A dust-bath consists of ashes or dry earth in which a little disinfectant powder has been mixed. This is a hen's natural way of



cleaning herself. 3. The Red Sussex possesses rather better table qualities than the Buff Orpington, but it is not nearly so good a layer. As a matter of fact, the Red Sussex is a comparatively poor winter layer.

### Short Replies.

- R. A. J. (Belfast): No.  
 M. R. S. (Dumfries): No.  
 H. R. T. (Tottenham): We do not know.  
 F. J. R. (Harrow): See article in this issue.  
 E. M. (Hampstead): From 1905 to 1909 inclusive.  
 O. M. (Watford): Single comb; fairly large and evenly serrated.  
 H. W. R. (Ilford): The Silver Grey or the Dark varieties.  
 G. B. D. (Newport, Mon.): Buff Orpington or White Wyandotte.  
 H. T. W. (Preston): See ILLUSTRATED POULTRY RECORD, May, 1909.  
 E. R. (Queenstown): (1) 120 to 130. (2) Yes. (3) 75 p.c. (4) White.  
 H. J. R. T. (Newark): The late Mr. William Cook, Orpington House, St. Mary Cray, Kent.  
 W. B. (Aberdeen): "The Amateur Poultry-Keeper." Price 1s. 2d., post free, from this office.

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## TRADE NOTICES.

### Mr. Tamlin's Exports.

The following is a list of Mr. W. Tamlin's exports for May: Forty 100 incubators, thirty 60 incubators, twenty 30 incubators, ten 200 incubators, ten 60 Sunbeam foster-mothers, and ten 100 Sunbeam foster-mothers to Messrs. Chandler, Melbourne, his agents for Victoria, Australia; ten 100 incubators and three 60 incubators to Smith, Nicholson, and Co., Victoria, Australia; two 30, one 60, and two 100 incubators, and two 60 and two 100 Sunbeam foster-mothers, to Bombay, India, per order of H. and W. Greer; two 60 incubators and two 100 incubators, to Madras, India, per order of Oakes Bros. and Co.; eighteen 60, eighteen 100, and ten 200 incubators, and ten 100 foster-mothers, to M. Andre Masson, France; three 30, six 60, and six 100 incubators, to Woodhead, Plant, and Co., South Africa; one 30 and one 60 incubator, and one 60 foster-mother, to G. Barelli, his agent for Italy; one 100 incubator and one 100 foster-mother, to W. Klappprath, British East Africa; one 100 incubator, to Captain Svensson, Sweden; one 60 incubator, to L. Nicholas, Secondee, West Africa; one 60 incubator, to W. Abrahams, Tangiers; one 100 incubator, to R. Merrony, Rhodesia; one 100 incubator, to J. Schemeil and Co., Syria; and one 60 incubator, to D. Fairweather, Ceylon.

### R. Toope and Co.

We have been favoured with a copy of Messrs. Robert Toope and Co.'s new catalogue, containing full particulars of the many poultry specialities turned out by this enterprising firm. A large number of new forms of houses are shown, while particulars are given of "The Asbestic Hen Incubator," the only machine in the world which is made of asbestos. The makers claim many advantages for this incubator, among which are entire absence of danger from fire and its proof against vermin, damp and rotting, while internal changes of temperature have no effect on the external heat. The "Coronation Grain Sprouter" is a valuable addition to the list, as it enables the fowls to be fed very cheaply, and provides them with succulent green food throughout the winter.

### A Valuable Paint.

We have received a sample of the New Olo Paint, a special preparation made by Messrs. Robinson Bros., of West Bromwich, which is not only a paint, but also a preservative and a disinfectant. The makers claim for it that it is the only paint in which the wonderful preservative properties of very carefully distilled coal-tar oils of special quality are properly mixed with high-grade colours without sacrificing the valuable protective qualities of the one and the decorativeness of the other.

### Egg-Boxes at the Dublin Conference.

A notable feature of the exhibits in the Aberdeen Hall of the Gresham Hotel, Dublin, during the Conference on May 3 and 4, was the egg cases shown by Mr. James Marshall, of Aberdeen. Among the cases exhibited were the Simplex and Duplex boxes for 30 doz. and 15 doz. eggs, each being fitted with its locked sections. Nothing can surpass these cases for simplicity in packing and safety in transit. There were also exhibited the Premier Box for twelve or twenty-four eggs, an excellent case for the small poultry-keeper.

### Exportation of Poultry.

Messrs. Van Oppen and Co., Ltd., are specialists in the exportation of poultry to all parts of the world. They make not only the freight a matter of consideration, but also the best methods of protecting the birds during their journey. They are, from their large dealings, able not only to obtain advantages as regards freight on all the fastest steamers, but to supply the coops, crates, or other form of enclosures at the most reduced prices. We understand they have a special staff who give this matter their personal attention. When one considers the details which go towards a successful conveyance of birds, not only alive, but in good health, the prompt connecting up to the different modes of conveyance, the English rails to the outgoing steamers, and the reforwarding up country on the arrival at foreign ports, it will be seen how necessary it is to find a reliable firm who will relieve breeders of all these anxieties. The details are too numerous to be considered in the space that can be allotted to this paragraph, and we would therefore recommend our readers to communicate direct with the firm above-mentioned, whose telegraphic addresses are "Vanoppen," London, Liverpool, Manchester, Birmingham, Bradford, &c., and whose central address is that given in their advertisement in this journal—namely, Van Oppen and Co., Ltd., 90-91, Bartholomew Close, London, E.C. (head office), from which all information will be furnished on application.

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## SELECTIONS FROM OUR CONTEMPORARIES.

### The Italian Turkey.

The Italian turkey is largely bred in France, where it is known as the *Dindon d'Italie*. It is of a grey-black colour, with the feathers edged with a clear grey, and of smaller size than the ordinary turkey. In France the variety is used more especially for incubation, the hens being most persistent sitters, and frequently kept broody for three to six months without interruption. It may here be remarked, in connection with this subject,



that it is said to be a common practice in France to utilise the turkey cock as a "mother." To produce the "broody fever" it is the plan to give the bird a stiff dose of brandy and water, and while he is under the influence of the spirit he is placed on the nest of eggs, numbering perhaps thirty-five, and is left there all night. It is further stated that almost invariably he sits well and steadily, and is an excellent covering for the eggs; that when the chickens make their appearance he seems to forget that he is a male, and attends to them as well as any female; and that it is no uncommon sight in some parts of France to see a large turkey cock with a following of perhaps thirty youngsters, and appearing, as far as one is able to judge, as proud as a hen.—*Poultry*.

### Another German Danger.

According to a report published on behalf of the National Poultry Organisation Society, the Germans are eating eggs in such increasing numbers that in a few years there will be something like an egg famine in this country, unless we raise our own.

When the naval scare set half the nation frantic,

I kept my wonted air of calm repose;  
At Tariff pleaders and their facts romantic

I just turned up my supercilious nose;  
I read unmoved the startling revelations

Of a military critic in the *Times*—

But this news gives me mental palpitations;

You can hear them thrilling, throbbing in my  
rhymes.

Eggs are more important far than any cereal,

Their worth we cannot over-estimate;

Be they manufactured goods or raw material,

They're the bulwark of the British breakfast-plate;

And if once this hydra-headed German vulture

Fastens greedy claws upon the world's supply,

We shall not be granted time for poultry culture,

We must move at once—or else prepare to die.

So let us all who scorn the name of traitors

Unite to form a patriotic band,

And insist that we shall build two incubators

For each one built in any other land;

And further let Lloyd George's Budget statement—

To give the poultry trade a chance to thrive—

Provide a ten-pound income-tax abatement

For every brood of chickens over five.

These prompt measures will convince the greedy  
stranger

That our ancient fighting spirit is not gone,

And we shall feel we've something, when in danger,

Besides the Yellow Press, to egg us on;

And then, while threat'ning war-clouds melt before us,

And the battle banners peacefully are furled,

We all can sing the patriotic chorus—

"Britannia rules the hen-roosts of the world."

—*Yorkshire Observer*.

### More Poultry-Keepers Wanted.

Mr. I. K. Felch, in *Poultry Monthly*, calls attention to the fact that poultry-keeping is not growing apace with the increase of population, to which he attributes the advance in prices, and says that "the next five years will be the greatest demand for good breeding stock the poultrymen have ever had in America."

## OUR BOOK MARKET.

Any of the following books will be supplied at the prices named. Cash must always accompany orders.

**Amateur Poultry-Keeper.** By W. M. ELKINGTON. 120 pages. Fifteen illustrations. Price, 1/2 post free.

**Incubators and their Management.** By J. H. SUTCLIFFE. Fifth Edition. Illustrated. Price, post free, 1/2.

**Lett's Poultry-Keeper's Account Book.** Edited by LEWIS WRIGHT. Cr. 8vo. Post free in the United Kingdom, the Colonies, and foreign countries, 2/8.

**Poultry and Egg Raising at Home.** By W. M. ELKINGTON. Illustrated. Price, post free, 1/2.

**Poultry Culture for Profit.** By Rev. T. W. STURGES, M.A. Third Edition. Cr. 8vo, 134 pages. Fully illustrated. Post free in the United Kingdom, the Colonies, and foreign countries, paper covers, 1/3; cloth, 1/9.

**Poultry Fattening.** By EDWARD BROWN, F.L.S. Fifteen illustrations, 120 pages. Price, 1/2 post free.

**Poultry for Prizes and Profit.** By JAMES LONG. New Edition. Revised by W. M. ELKINGTON. Illustrated. Post free 6/4 in the United Kingdom; in the Colonies and abroad, 7/6.

**Poultry-Keeping as an Industry for Farmers and Cottagers.** By EDWARD BROWN, F.L.S., Secretary of the National Poultry Organisation Society. Sixth Edition. 4to, 206 pages, fully illustrated. Post free in the United Kingdom, 6/6; 6/9 to the Colonies and foreign countries.

**Popular Poultry-Keeping.** By W. M. ELKINGTON. Illustrated. Price, post free, 1/2.

**Possibilities of Modern Poultry-Farming.** By J. STEPHEN HICKS and W. H. G. EWART. Price, 1/1½ post free.

**Progressive Poultry Culture.** By ARTHUR A. BRIGHAM, B.S., Ph.D. Illustrated. 300 pages. Post free, 6/6.

**Races of Domestic Poultry.** By EDWARD BROWN, F.L.S., Secretary of the National Poultry Organisation Society. 4to, 234 pages, with chapters on breeding, fully illustrated. Post free in the United Kingdom, 6/6; 6/9 to the Colonies and foreign countries.

**Record Poultry Book.** Nine illustrations. Written by Experts. Post free, 1½d.

**Record Poultry Book.** Nine illustrations. Written by Experts in Welsh. Price, post free, 1½d.

**Report on the Poultry Industry in America.** By EDWARD BROWN, F.L.S. Third Edition. Fully illustrated. Price, post free, 1/3.

**Report on the Poultry Industry in Denmark and Sweden.** By EDWARD BROWN, F.L.S. Fully illustrated. Price, post free, 1/3.

**The New Book of Poultry.** By LEWIS WRIGHT. Demy 4to, 600 pages, with many coloured plates, &c. Post free in the United Kingdom, 21/10; 24/- to the Colonies and foreign countries.

**The Poultry Manual.** By Rev. T. W. STURGES, M.A. 600 pages, 52 illustrations. Price, 6/6 post free.

**Report on the Second National Poultry Conference, 1907.** Edited by EDWARD BROWN, F.L.S. 382 pages, with nine illustrations. Post free in the United Kingdom, 5/6; in the Colonies and foreign countries, 6/-.

**The Practical Poultry-Keeper.** By LEWIS WRIGHT. Cr. 8vo, 320 pages, with eight coloured plates and other illustrations. Post free in the United Kingdom, 3/10; 4/- to the Colonies and foreign countries.

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